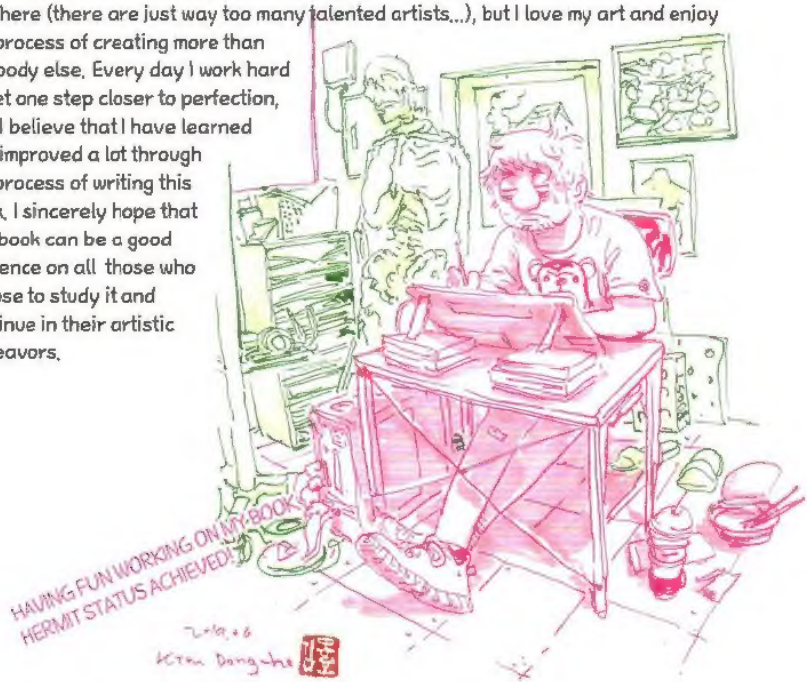
SPACE DRAWING
PERSPECTIVE
VOLUME 1

~ PROLOGUE

I didn't expect to be publishing a drawing theory book until I was much older. But after devoting myself to spatial drawing for many years, the opportunity came sooner than I expected, and I began to dream of the book I wanted to write. I bought every single drawing theory book on perspective that was on the market and skimmed through them. Some were simple, and others were very detailed but difficult to understand. In any case, I knew that they all had their own strengths and purposes. So I wondered what my book's strength and purpose would be. I concluded that I should make use of my drawings as much as possible, since it was through those same drawings that I was offered the chance to write a drawing theory book. That way, I thought, the readers would be able to understand what was going through my mind while I was drawing.

I wanted this book to stick to the principles yet maintain its intuitiveness. Rather than creating a detailed framework and delving into each topic (that would have taken at least a couple of years), I just started writing based on the content that I've already been teaching. In no way do I think that I'm the best artist out there (there are just way too many talented artists...), but I love my art and enjoy the process of creating more than anybody else. Every day I work hard to get one step closer to perfection, and I believe that I have learned and improved a lot through the process of writing this book. I sincerely hope that this book can be a good influence on all those who choose to study it and continue in their artistic endeavors.



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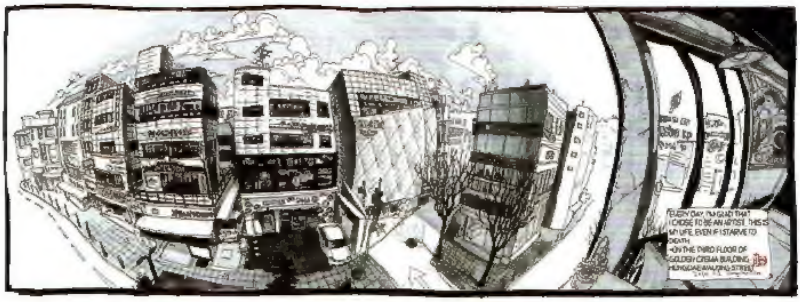

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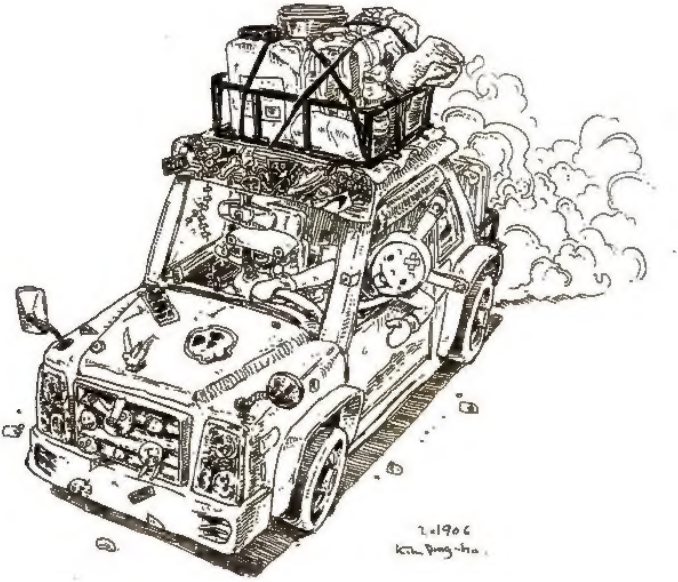
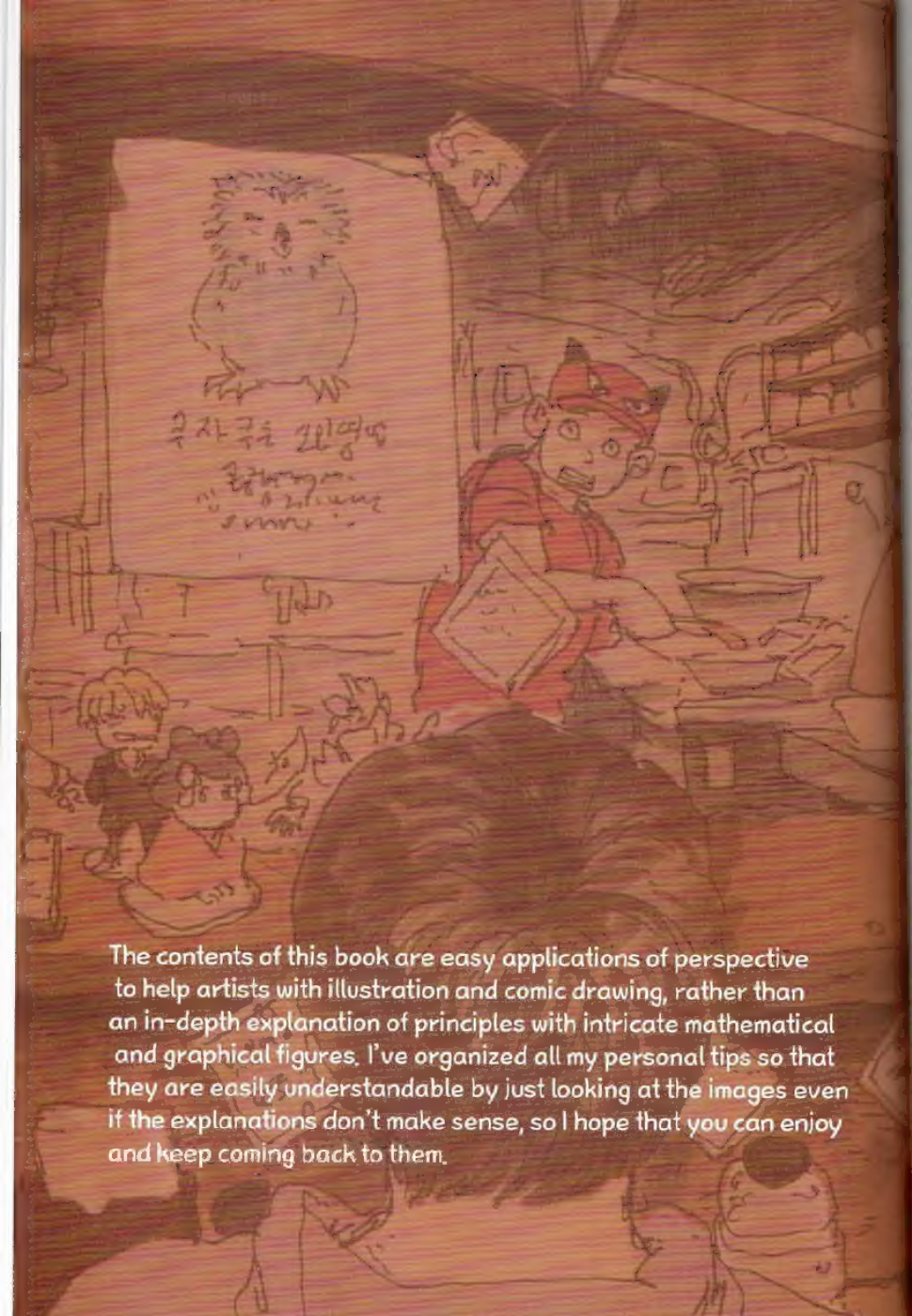


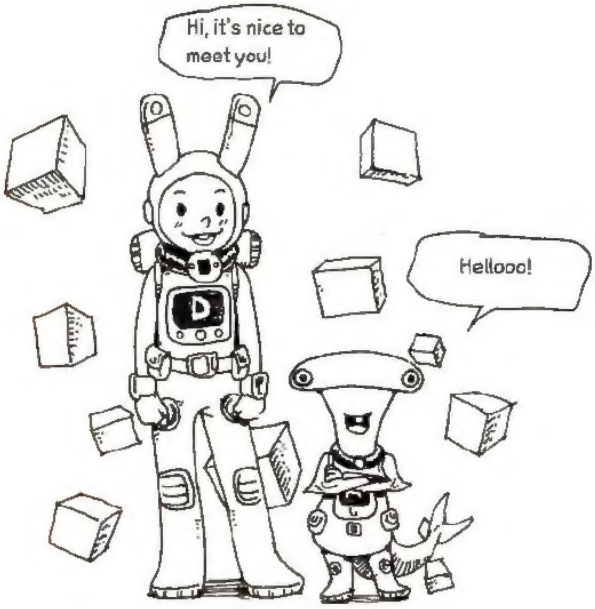


The contents of this book are easy applications of perspective to help artists with illustration and comic drawing, rather than an in-depth explanation of principles with intricate mathematical and graphical figures. I've organized all my personal tips so that they are easily understandable by just looking at the images even if the explanations don't make sense, so I hope that you can enjoy and keep coming back to them.

PART 01

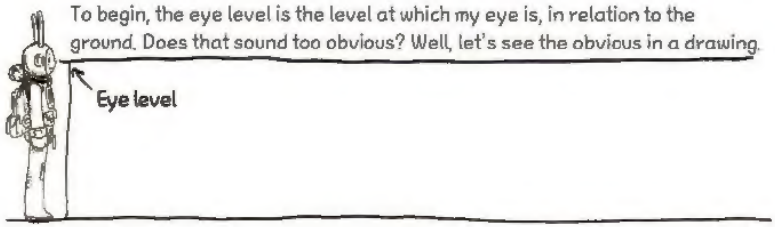
WHAT IS PERSPECTIVE?

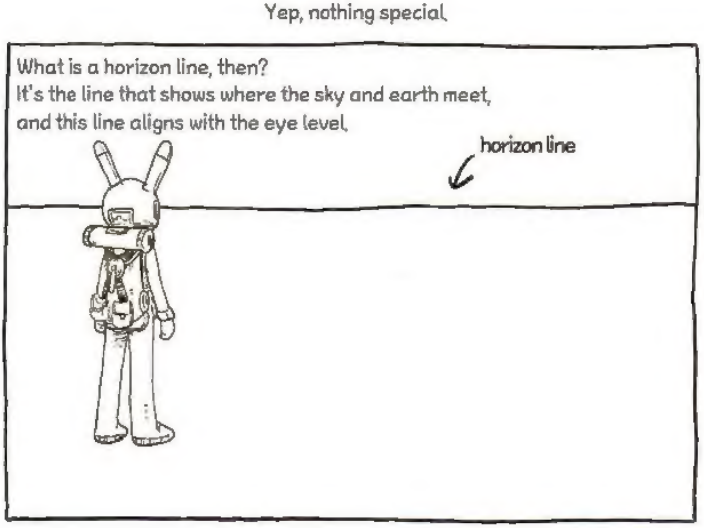
These guys are my little avatars that will be explaining the material on my behalf. They may not look too important, but they'll make my book just a tad more interesting. Please use them as your guides!



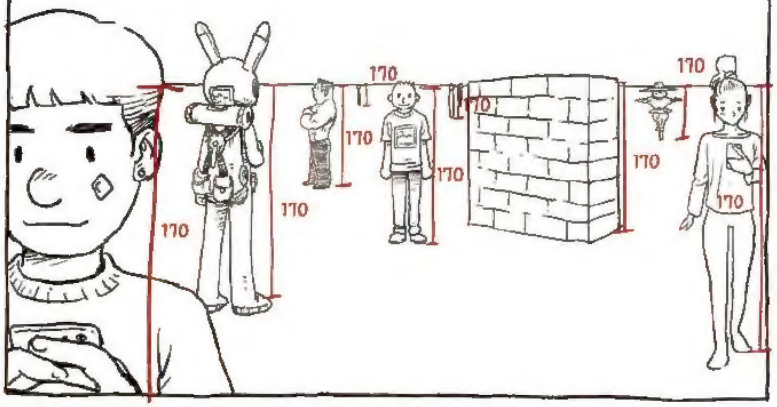
What is Perspective?

Perspective is the technique of transferring a three-dimensional space onto a two-dimensional surface. Simply put, it's the art of expressing on paper how far or close things are. Take a look in front of you. There are so many things stretched out in front of you, without clear boundaries. It's overwhelming to try and figure out how much of what you see that you want to draw, and how big or small to draw it. There really are too many things to pay attention to. And even if you do pay attention, it's hard to guarantee that it'll turn out the way you want it to. In this book, I will not only discuss the principles of perspective, but I will also show you many examples of how to apply those principles to express spatiality naturally. Before we start, let me explain the two most important elements. If you've taken art classes before, I'm sure you've heard about them a million times. First, we have the eye level. And then the vanishing point. These two are essential key elements when it comes to drawing with perspective.
Let me explain them to you in simpler terms.

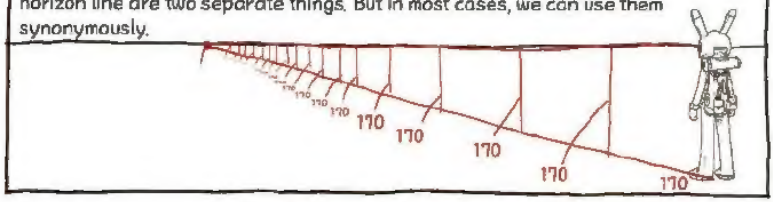




Let's say that I am 170cm tall. That makes the height of the horizon line 170cm as well. And any object that hits that line is 170cm tall, too.

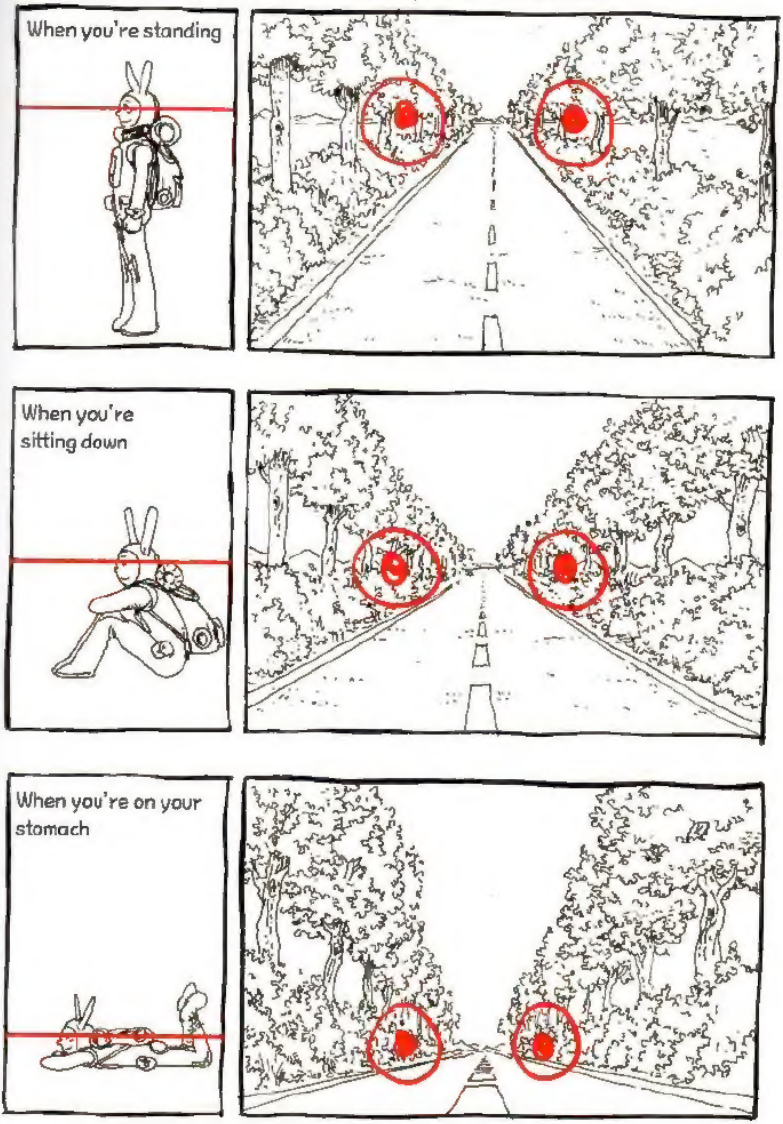


Technically speaking, the horizon line isn't really a line. As the eye level moves farther away from you, everything is condensed into a line. Grasping this concept will be helpful in understanding perspective. Basically, the eye level and the horizon line are two separate things. But in most cases, we can use them synonymously.

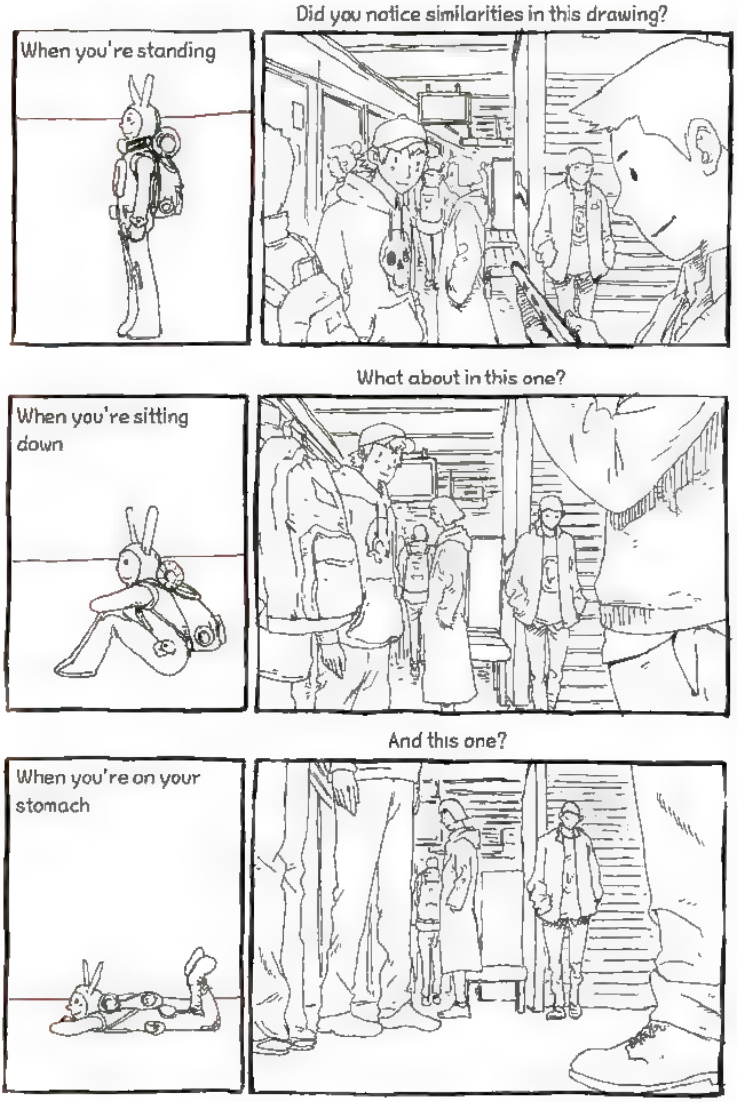


And no, it's not because the earth is round that we can see the horizon line.

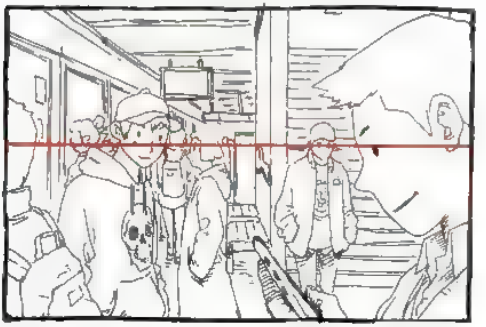
Your eye level = horizon line



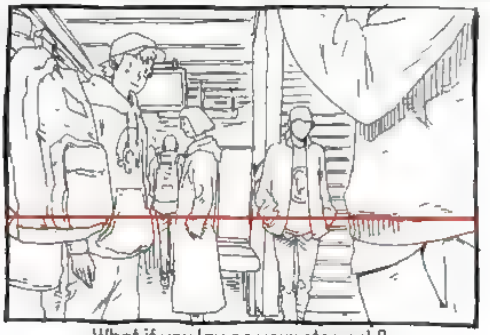
Let's move to a crowded place to help you understand this a little better.



In the first drawing, most people's eyes are at your eye level.
Of course, there is a little variation depending on their height.
But for the most part, you can see that your eye level hits
the same part of the face for everyone.



Let's sit down. Now your eye level is at everybody's waistline.



What if you lay on your stomach?
You can see that your eye level is at people's ankles.

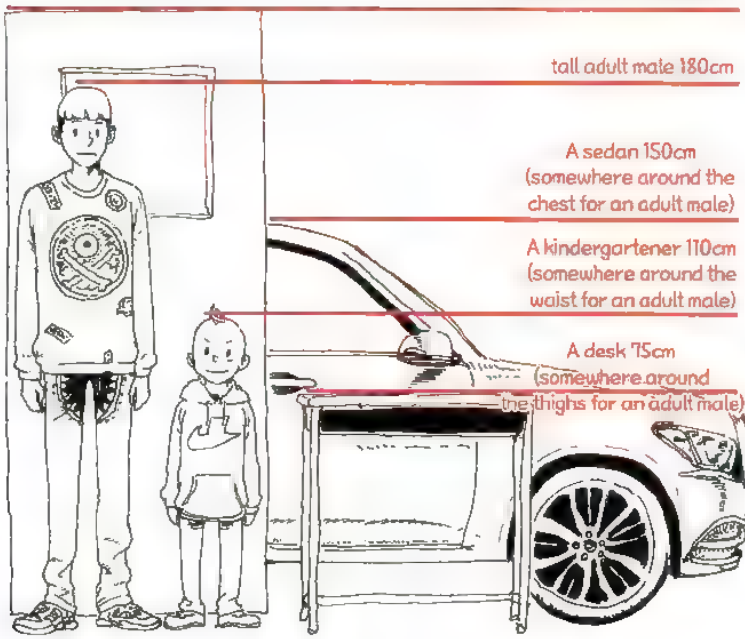
Let's try to find the eye level in these drawings.
And we'll also try to figure out where the eye level hits for all the characters.

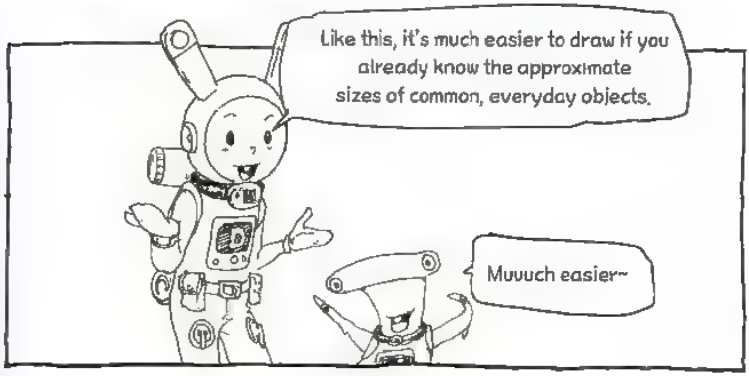
Waist

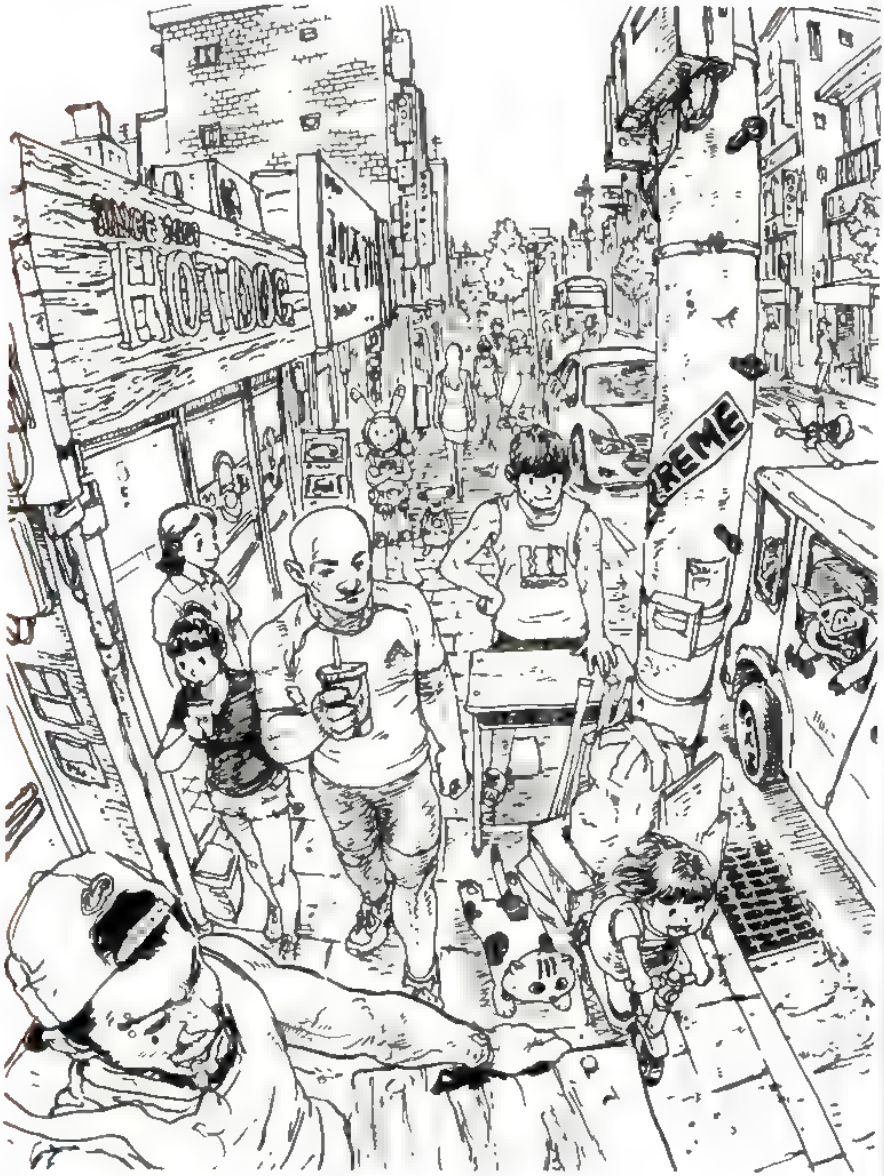
Waist

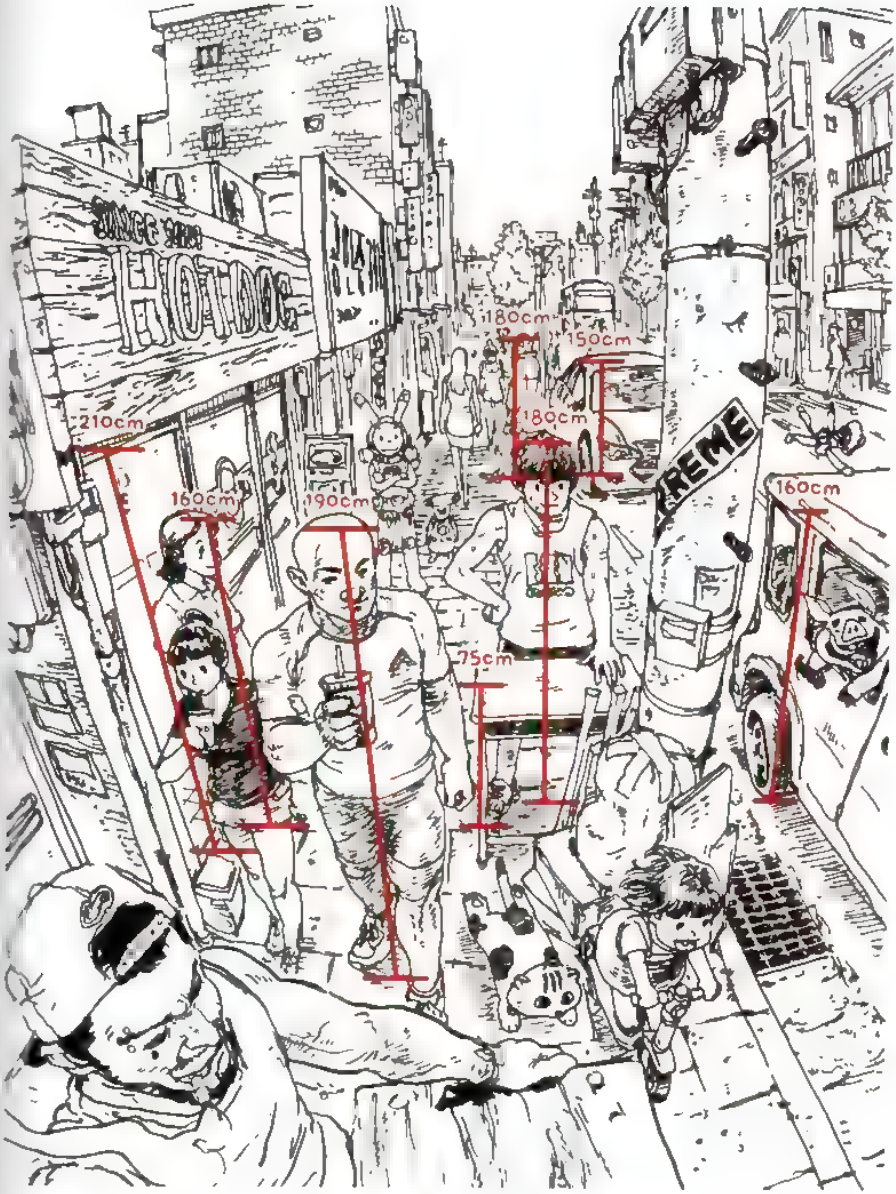
Chest (obviously, the little girl in the front is much smaller than everybody else, so the eye level doesn't hit her chest.)

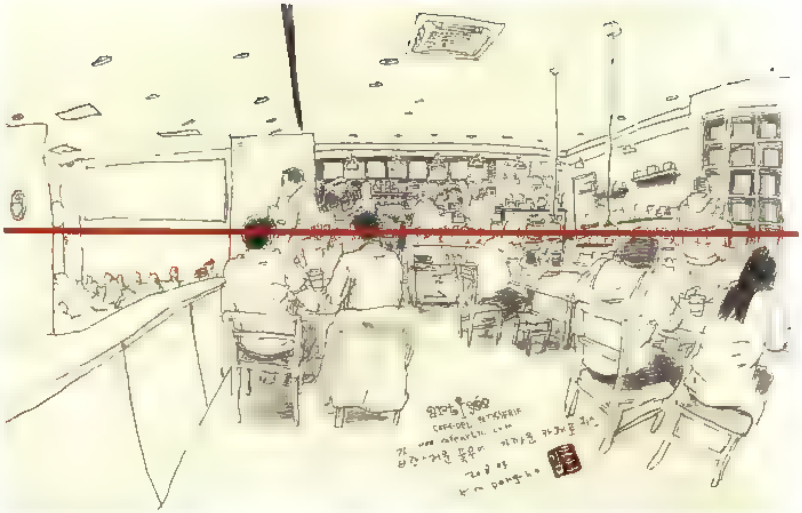
Shall we go a little deeper?
Let's see the average heights
of figures or objects we draw often.






HOTDOG
REME


HOTDOG
210cm
160cm
190cm
180cm
150cm
180cm
75cm
160cm

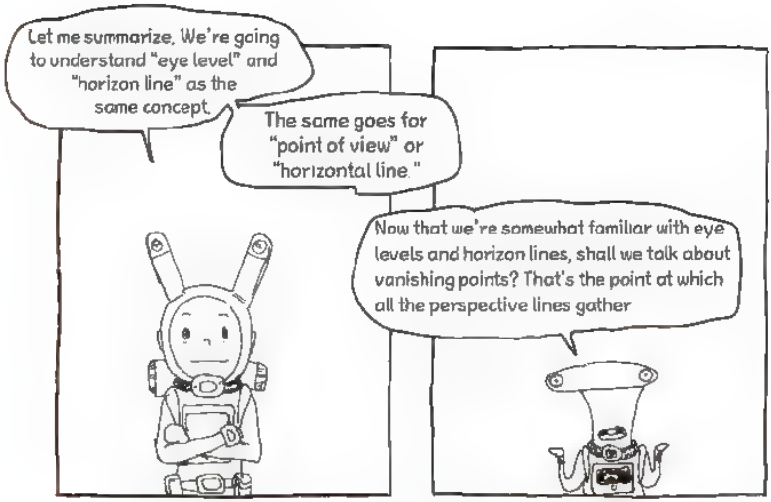


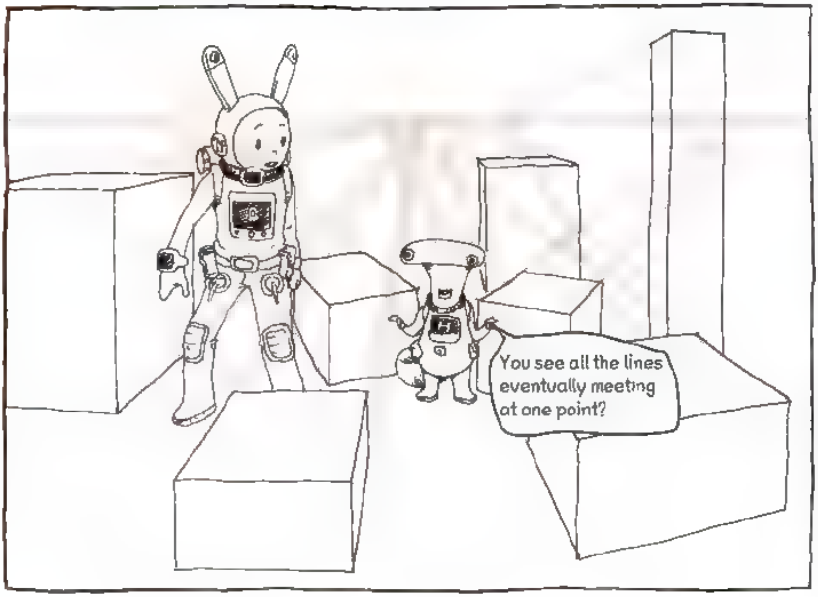
For the people sitting down, the eye level hits them at their heads, and for those who are standing up, their waists. The woman on the far right is either much shorter or inaccurately drawn.

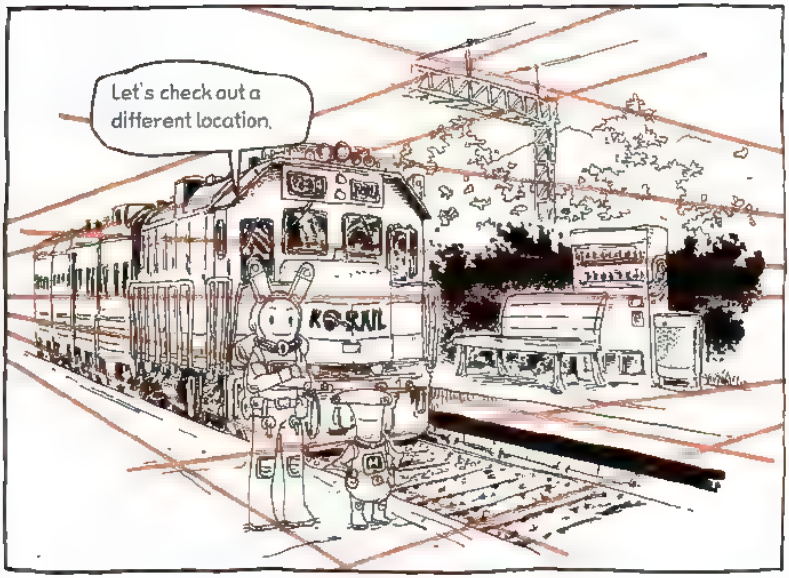
This is what it would have looked like with some extra people in the frame.

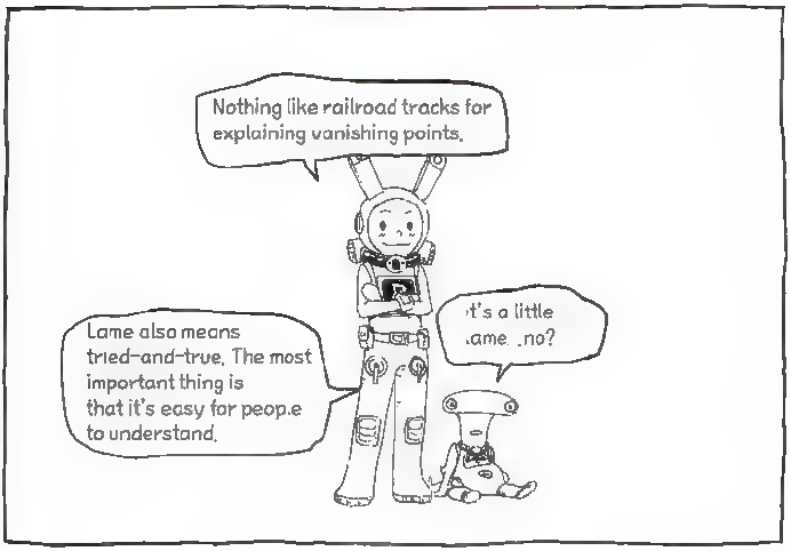
The eye level hits most people at the shoulders, but for these people here, it hits at their knees
Do you see the stairs? They're standing on elevated ground, which raises their positions.

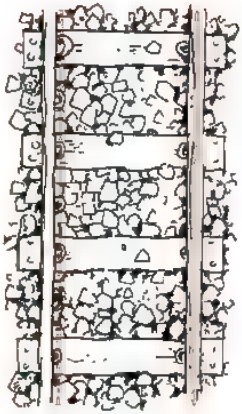
If I were to draw a car next to the woman walking past, it would be around this size.


Let me summarize. We're going to understand "eye level" and "horizon line" as the same concept.
The same goes for "point of view" or "horizontal line."
Now that we're somewhat familiar with eye levels and horizon lines, shall we talk about vanishing points? That's the point at which all the perspective lines gather

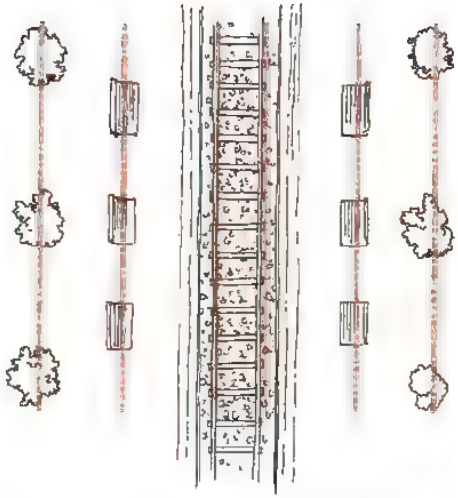

You see all the lines eventually meeting at one point?


Let's check out a different location.
KO-RAIL

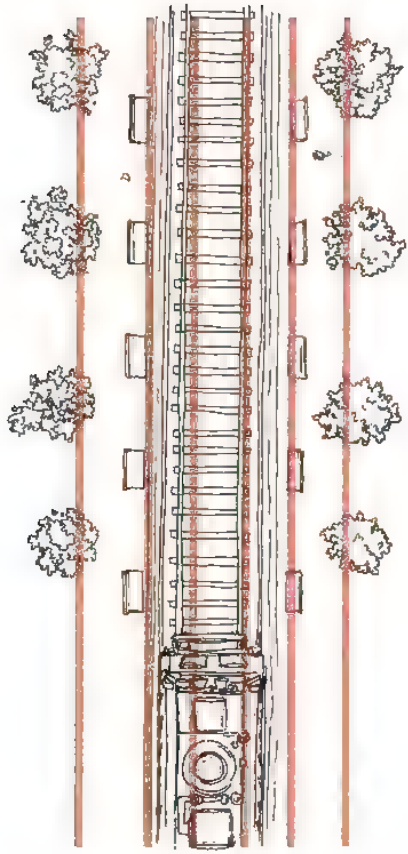

Nothing like railroad tracks for explaining vanishing points.
Lame also means tried-and-true. The most important thing is that it's easy for peop.e to understand.
›t's a little ‹ame. .no?



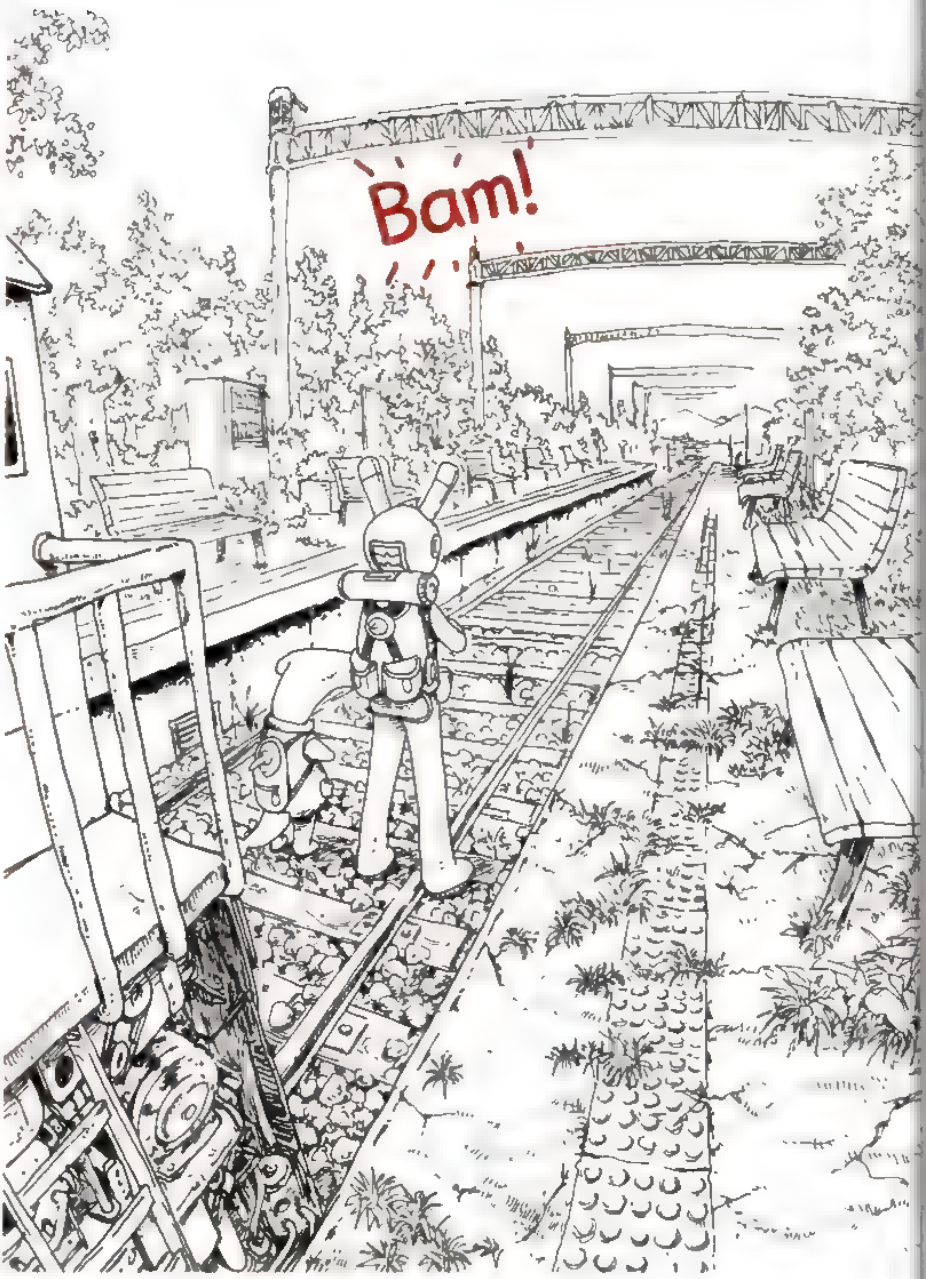
Let's take a look at the basic shape of a railroad track.

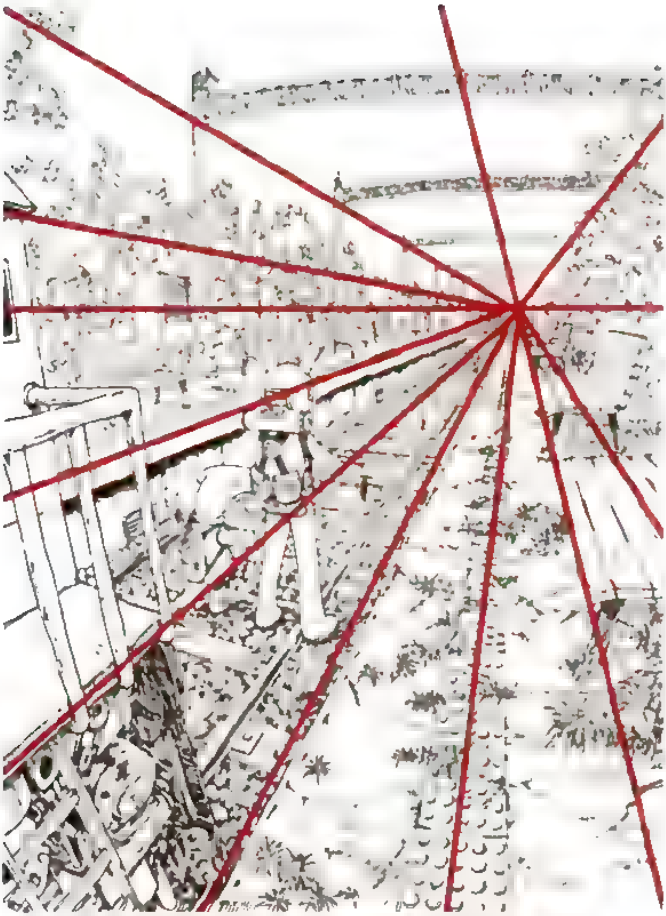


f we zoom out, we see that the benches and trees are positioned parallel to the tracks.



If we zoom out even farther, the train is also parallel to the tracks.
Now let's try to draw this according to perspective.

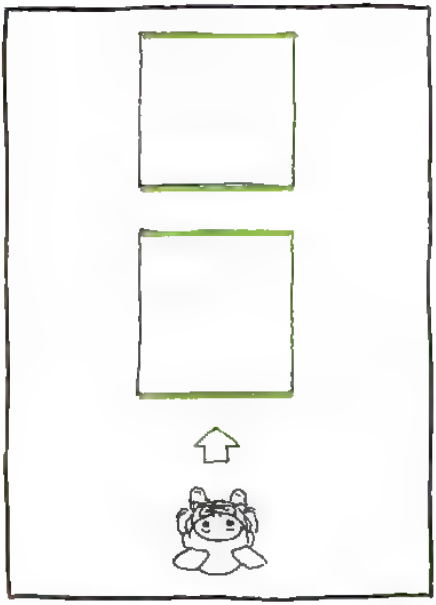

Bam!



All the parallel lines become perspective lines that eventually meet at one point. This is called the vanishing point.

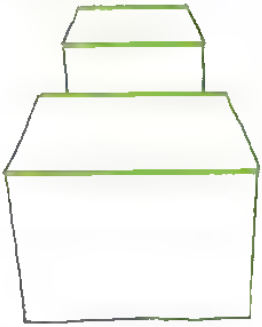
It's not a real, tangible point. It's not really a point at all. It's simply that objects get smaller in the direction that you're looking at, and eventually appear to be a single dot.

This vanishing point is a mathematical concept that was invented or perhaps discovered, for art's sake.
You can't even determine how far this point is from where you're standing.



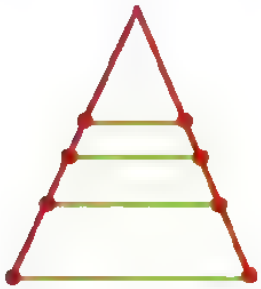
There are two boxes of the same size. One is placed in front of the other. Note that the lengths of the parallel lines are equal to each other.

You need the one in the front to look like it's closer to you and the one in the back to look farther away, right?

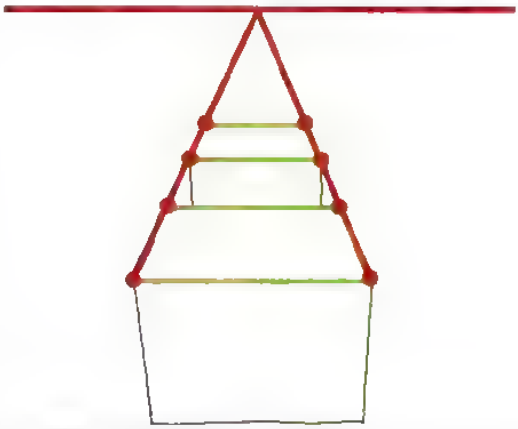


You'll notice that the lines, which were the same in length when from above, are gradually getting shorter.

This is quite obvious. The farther it is, the shorter it looks.



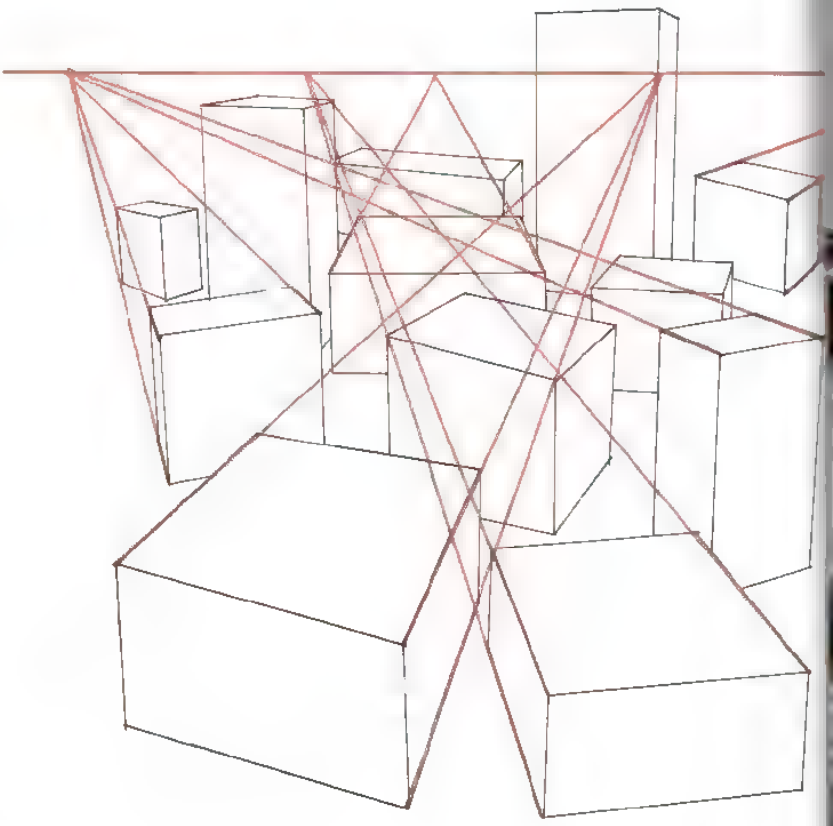
If you dot the ends of the lines and connect them it meets at one point.
You know by now that this is the vanishing point.



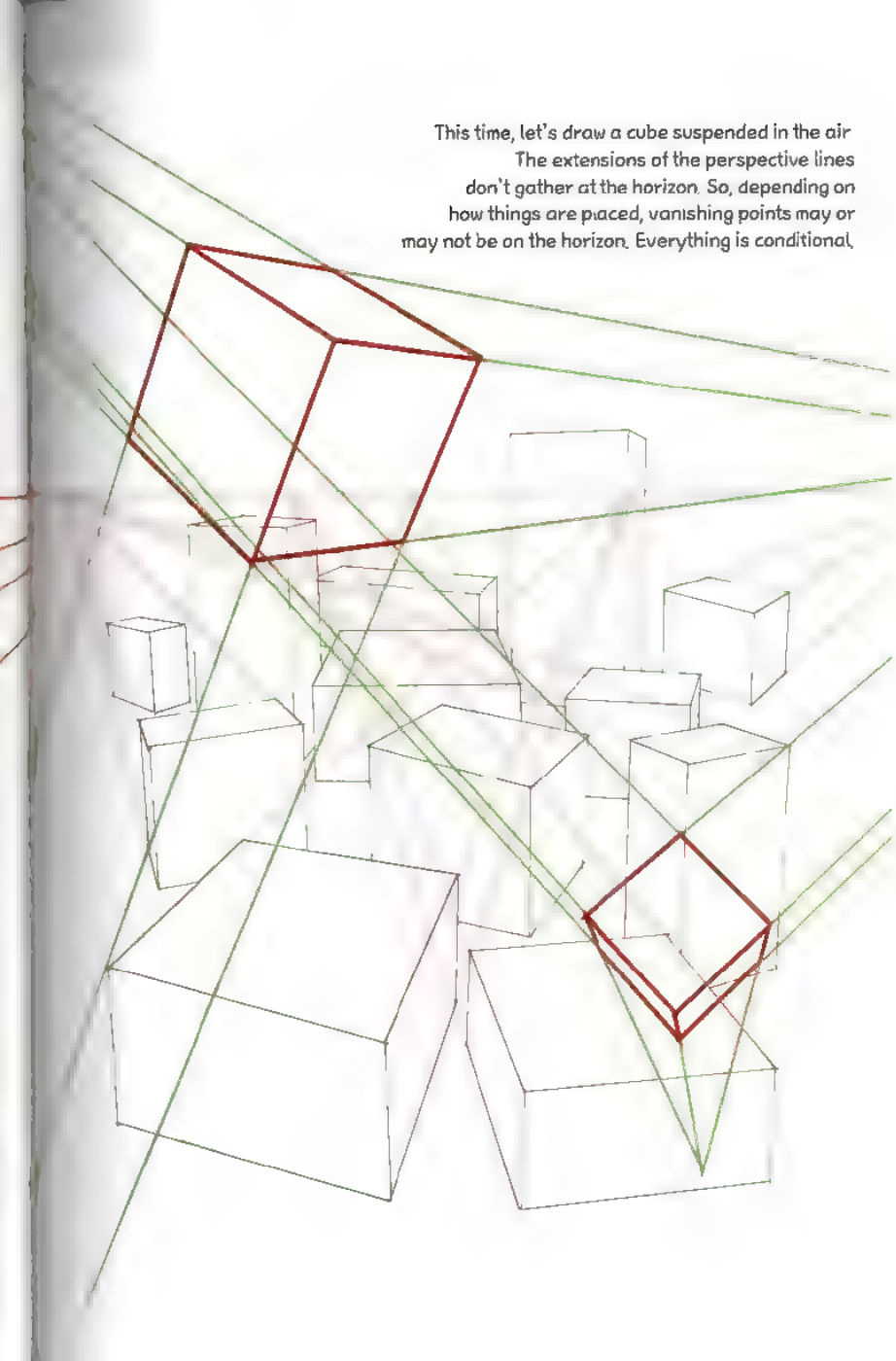
This vanishing point also lies on the horizon line. In other words,
the vanishing point for every object and space meets on the horizon line.

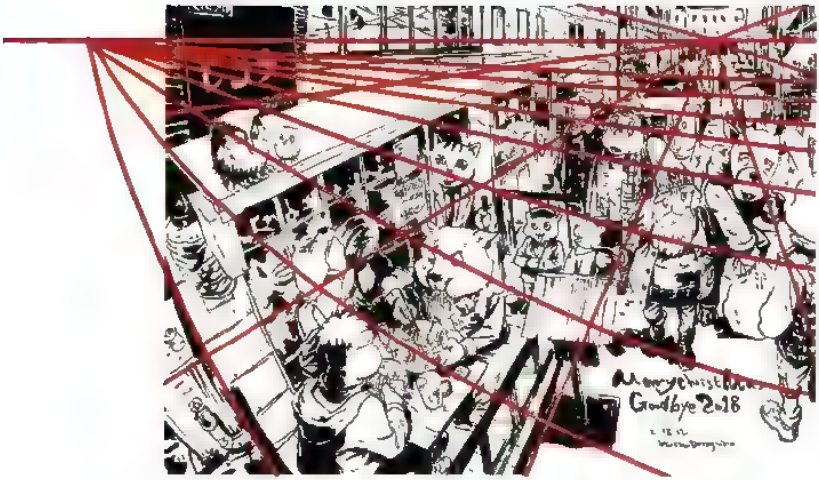
Of course, that's based on the prem se that the
object is properly placed flat on the ground.

Take these boxes that are sitting at different angles.
Try to extend their perspective lines and see where they meet.
If they meet on the horizon line, that means that they are
placed properly on the ground.

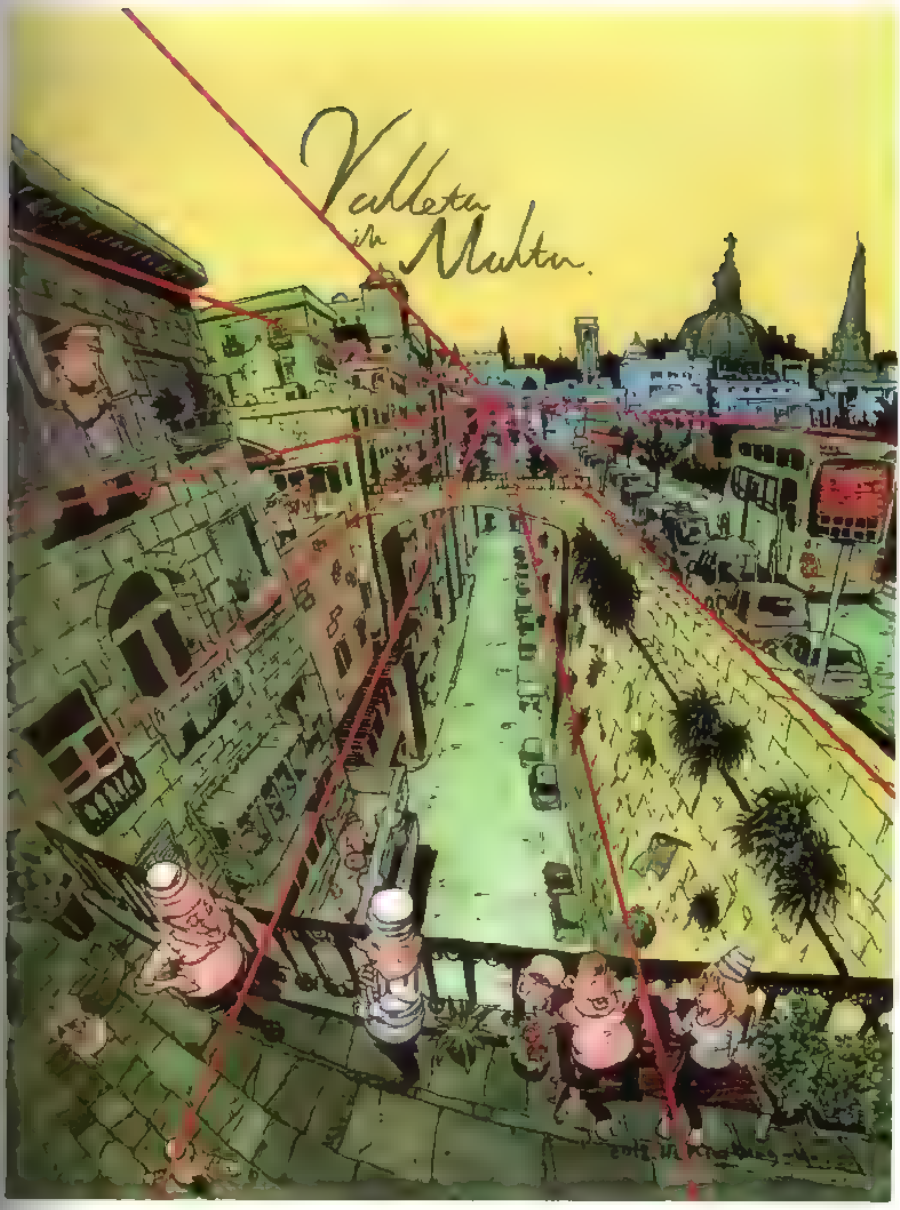


This time, let's draw a cube suspended in the air. The extensions of the perspective lines don't gather at the horizon. So, depending on how things are placed, vanishing points may or may not be on the horizon. Everything is conditional.

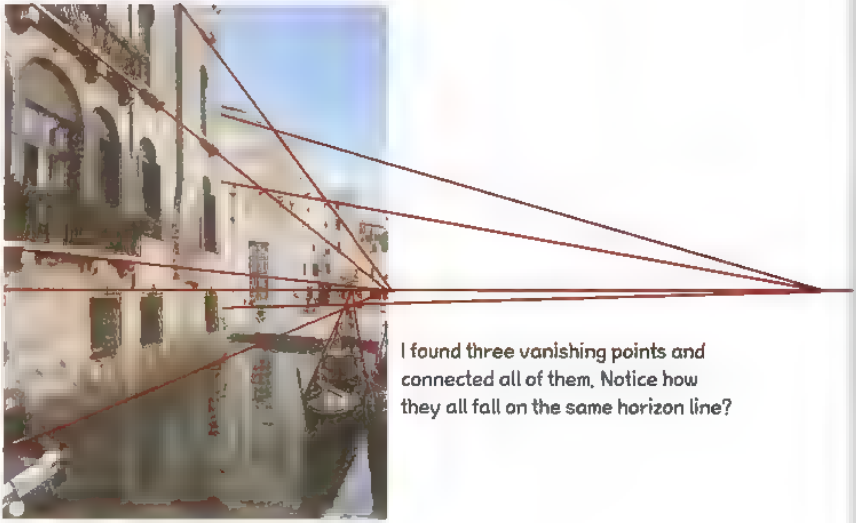



Goodbye 2018

Rome in Italy.

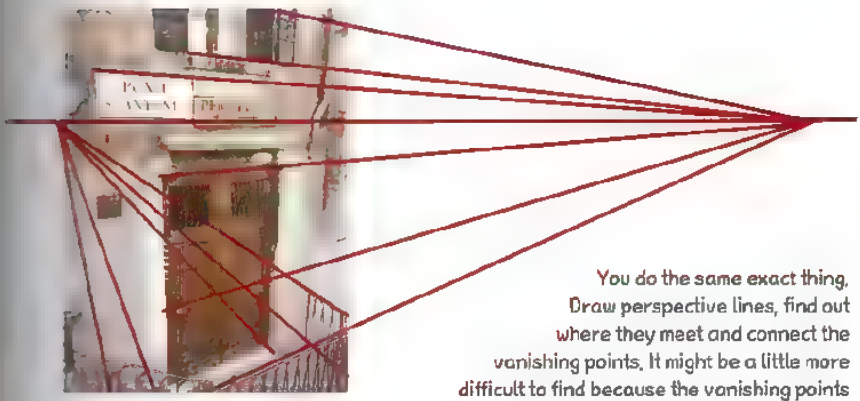

Valletta
in Malta.

Try to find the vanishing points for the buildings in these photographs. And once you connect those vanishing points, you get the horizon line.



I found three vanishing points and connected all of them. Notice how they all fall on the same horizon line?

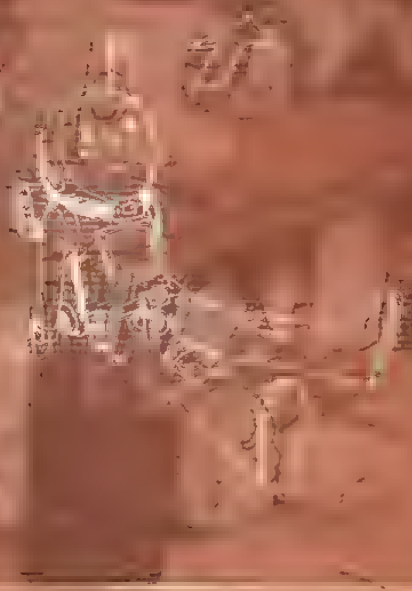
Then how do we find the eye level for close up photographs or drawings?

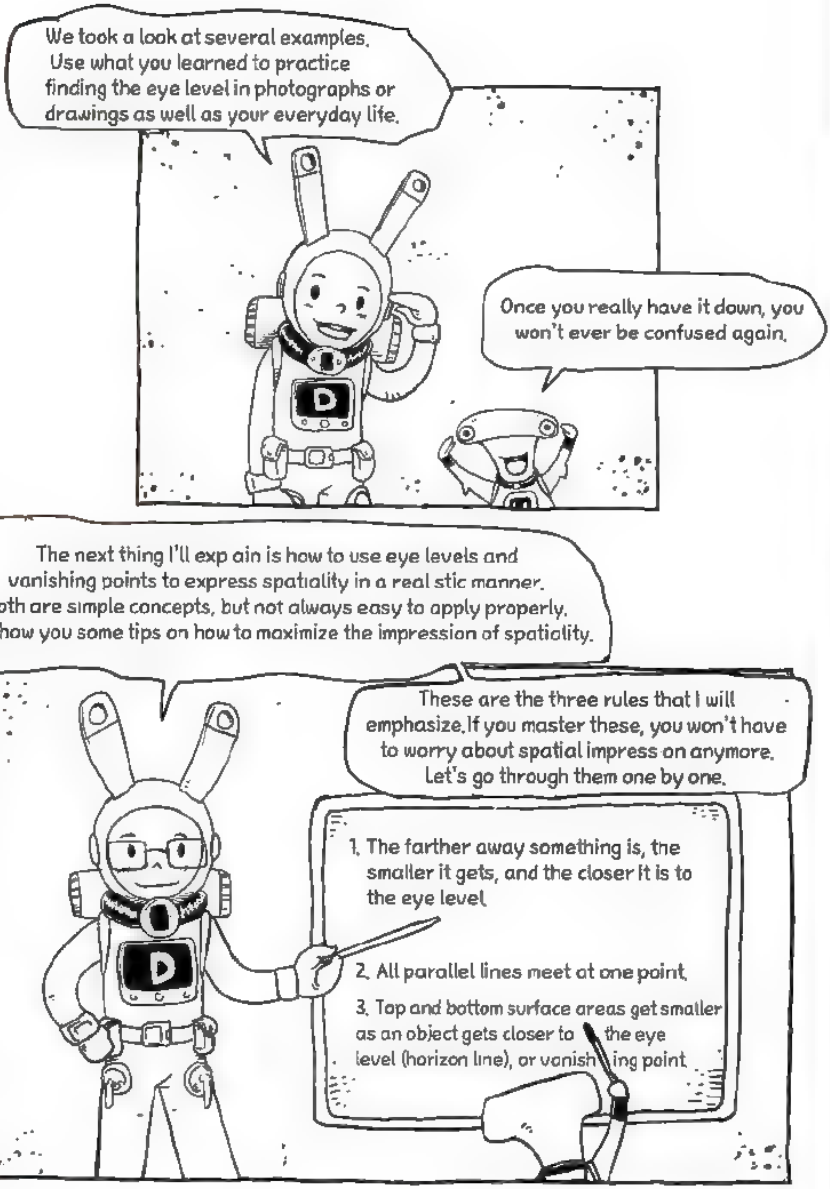


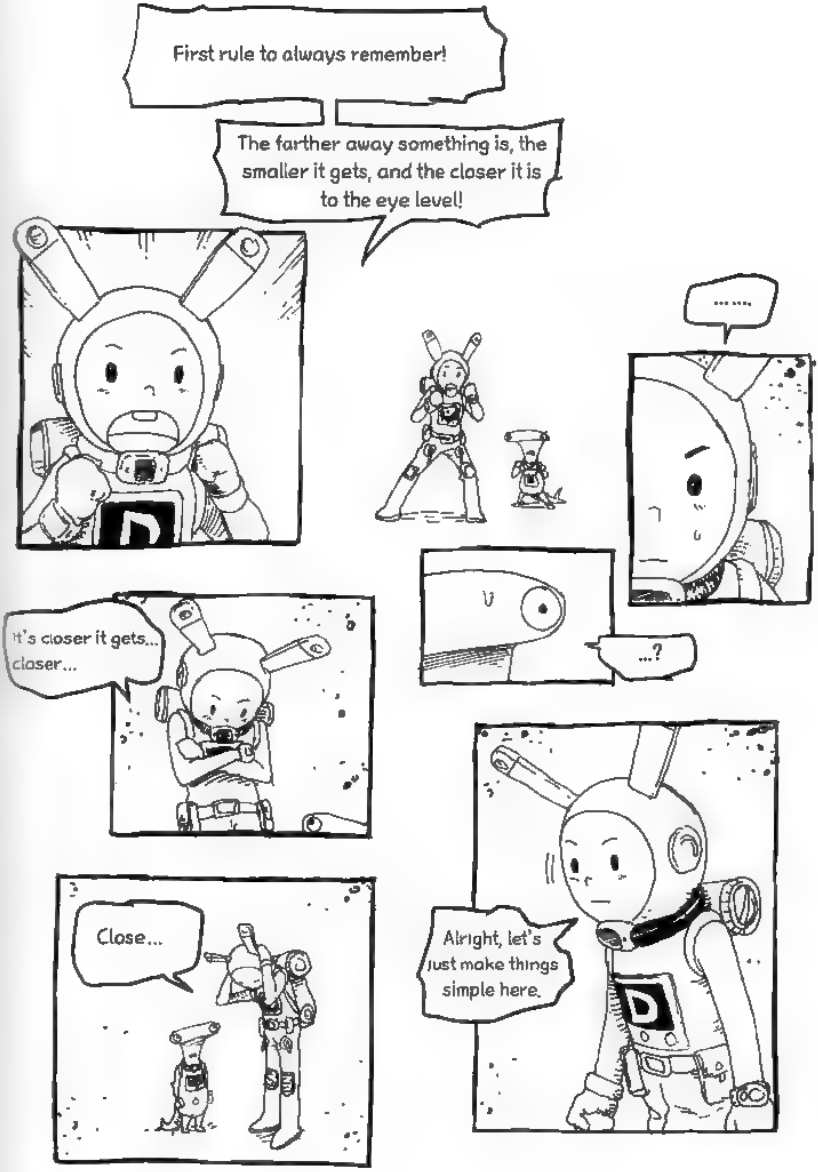
You do the same exact thing. Draw perspective lines, find out where they meet and connect the vanishing points. It might be a little more difficult to find because the vanishing points may be outside the actual photograph.

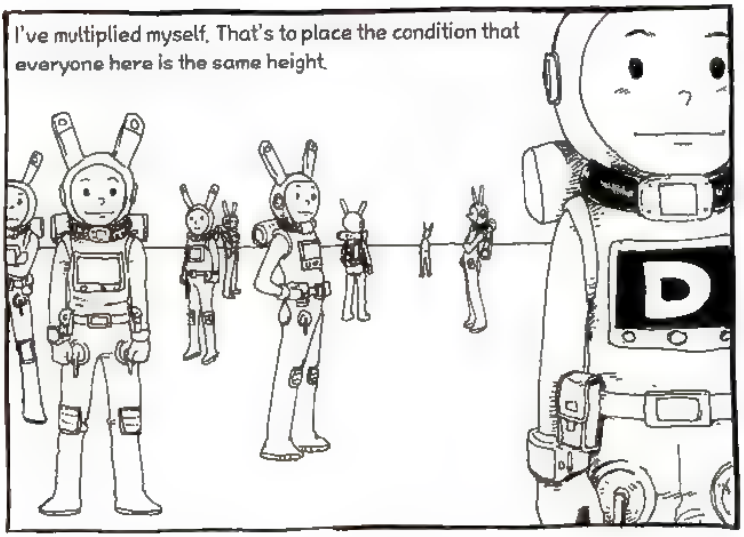
PART 02

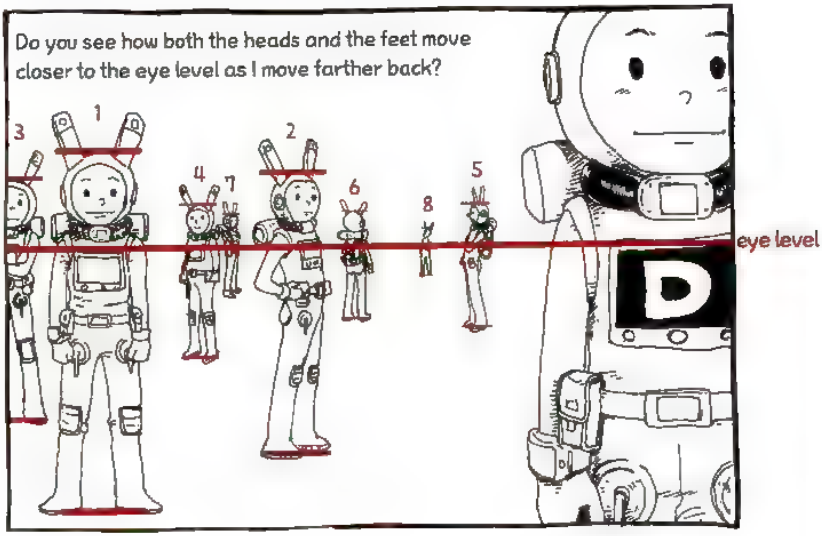
THREE RULES TO REMEMBER WHEN USING PERSPECTIVE



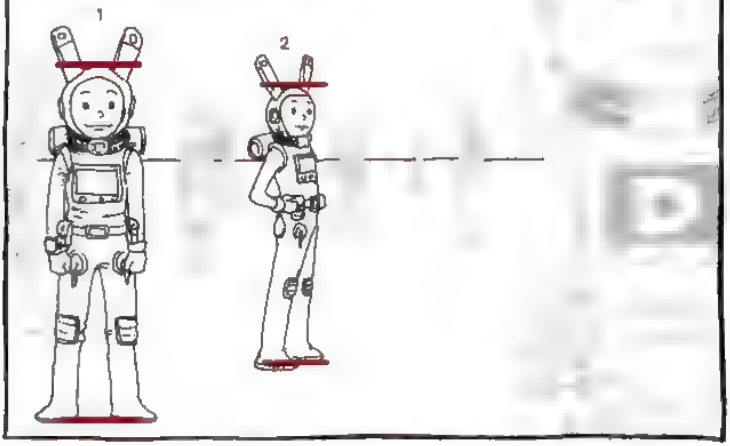

We took a look at several examples. Use what you learned to practice finding the eye level in photographs or drawings as well as your everyday life.
Once you really have it down, you won't ever be confused again.
The next thing I'll exp ain is how to use eye levels and vanishing points to express spatiality in a real stic manner. Both are simple concepts, but not always easy to apply properly. I'll show you some tips on how to maximize the impression of spatiality.
These are the three rules that I will emphasize. If you master these, you won't have to worry about spatial impress on anymore. Let's go through them one by one.
1. The farther away something is, the smaller it gets, and the closer it is to the eye level.
2. All parallel lines meet at one point.
3. Top and bottom surface areas get smaller as an object gets closer to the eye level (horizon line), or vanish ing point.


First rule to always remember!
The farther away something is, the smaller it gets, and the closer it is to the eye level!
.....
...?
It's closer it gets... closer...
Close...
Alright, let's just make things simple here.

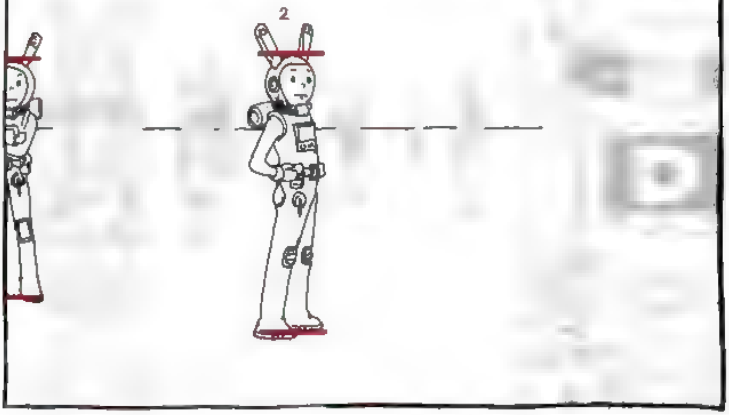

I've multiplied myself. That's to place the condition that everyone here is the same height.


Do you see how both the heads and the feet move closer to the eye level as I move farther back?
1
2
3
4
5
6
7
8
eye level

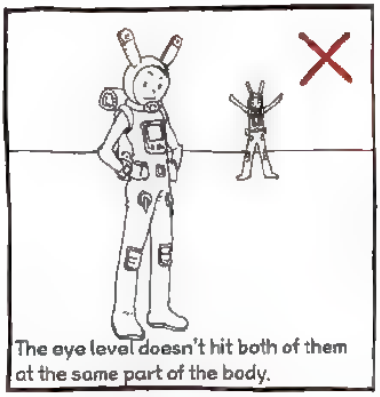
Compared to number 1, number 2's head and feet are closer to the eye level.

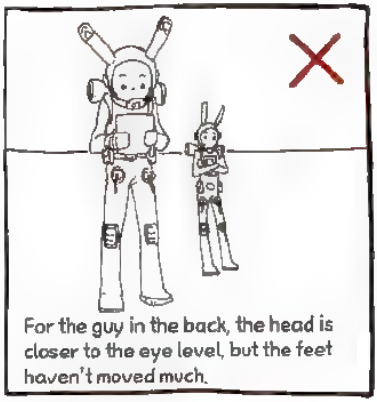


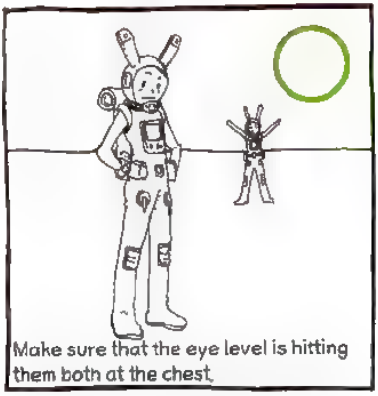
And compared to number 2, number 3's head and feet are closer to the eye level.

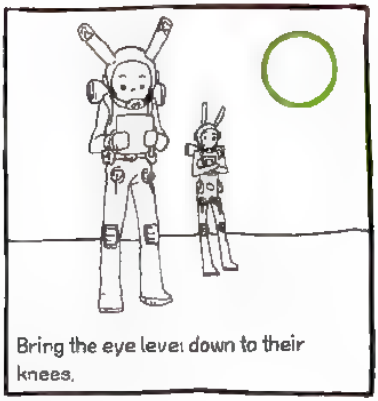


You might be thinking, "this is too obvious! Everyone knows this already."
So let me show you a couple samples with a wrong perspective.

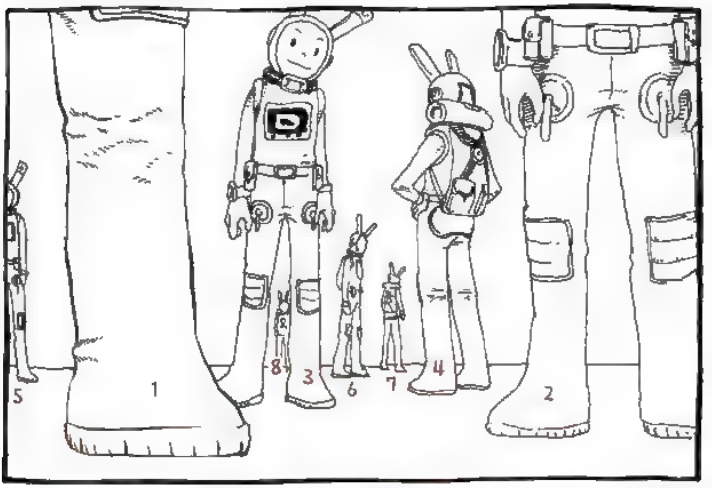




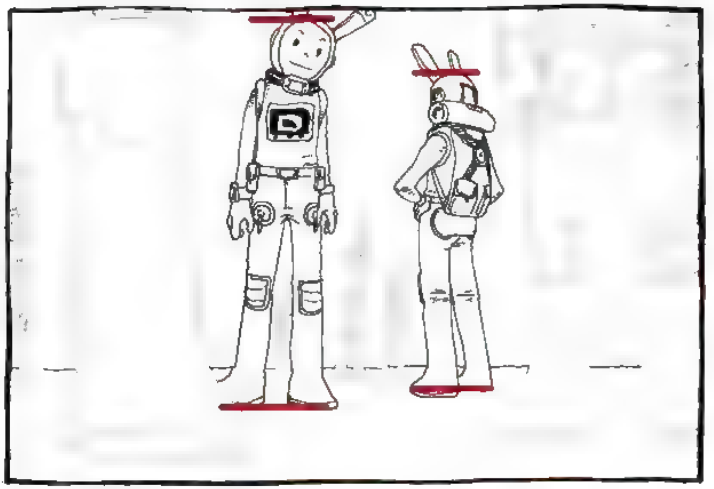




Here's another drawing using a wrong perspective.
This is from a low angle.

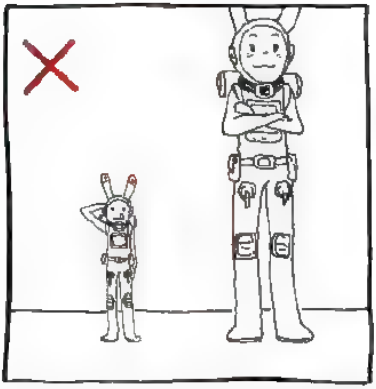


Let's number the characters in order of closeness and compare.

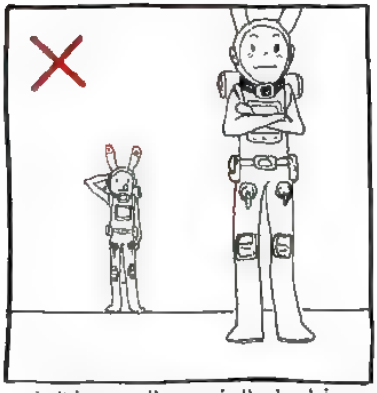


Number 4's head and feet are closer to the eye level than Number 3's.
And naturally, Number 4's a little smaller.

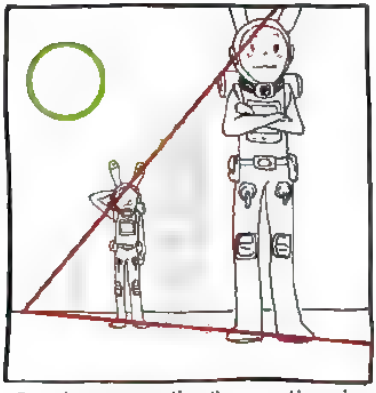
It's not just about making things smaller. All criteria have to be met.



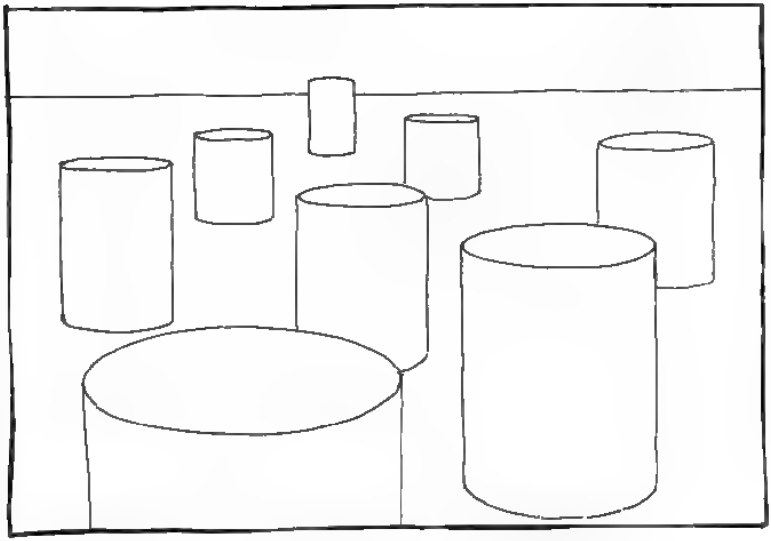
These two are different in size but their feet are at the same level. This is a big no-no. Now he looks like a mini-me standing next to regular-sized me.



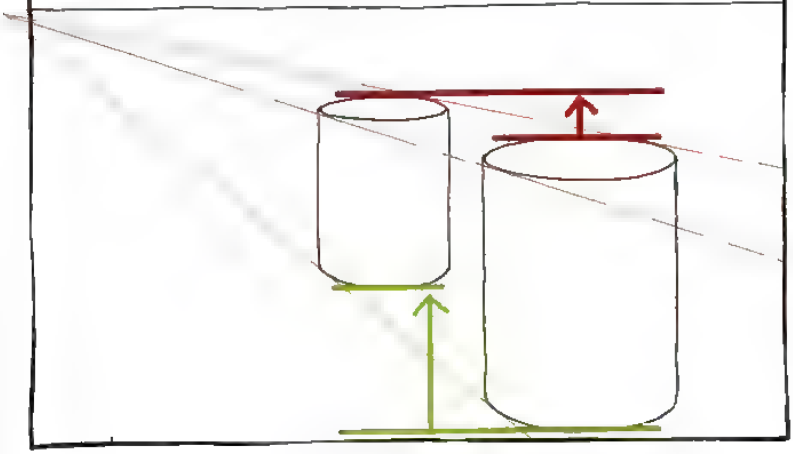
In this case, the one in the back is practically standing on the horizon line, like a giant. The decrease in distance between the eye level and the head, and the eye level and the feet, must be proportionate.

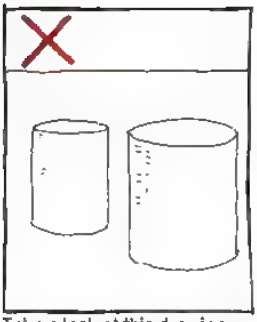


Drawing perspective lines and keeping characters within those lines is a safe way to move people around.

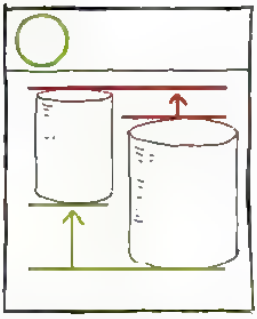


The same applies to a cylinder. The top and bottom move closer to the eye level in a proportionate manner.

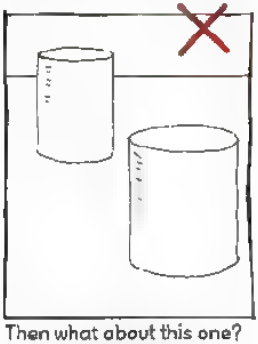




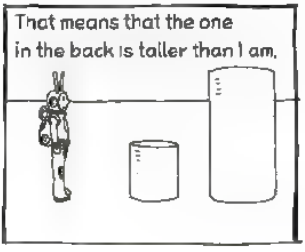
Take a look at this drawing.
If the two cylinders are meant to be different sizes, that's fine.
But if they're supposed to be the same size, this is wrong.

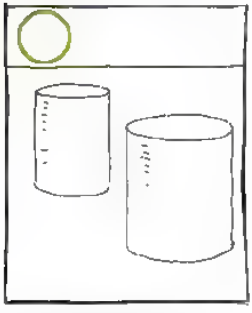


The top of the cylinder not just the bottom, must also move toward the eye level.



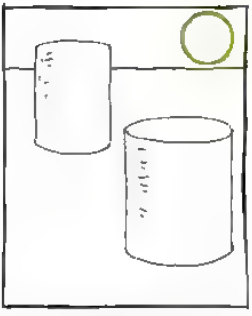
Then what about this one?
The cylinder in the back surpasses the eye level.





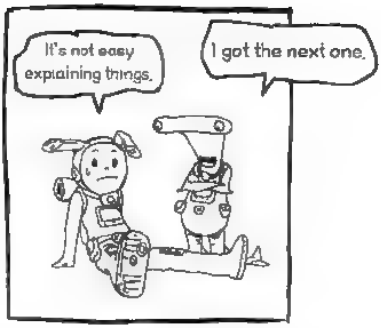
You need to either adjust the size accordingly

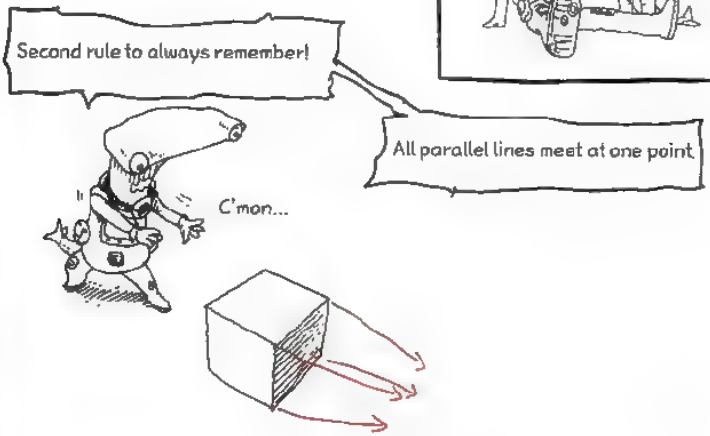
OR



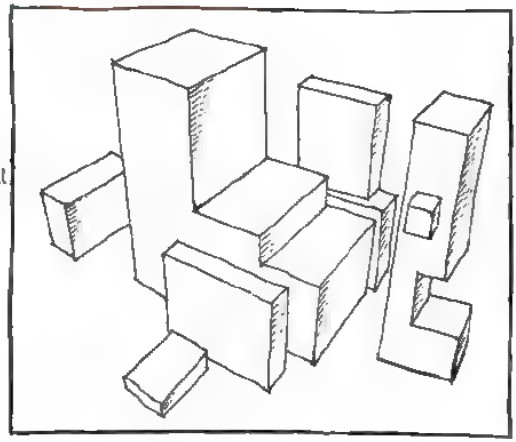
Not make the top surface of the cylinder visible.

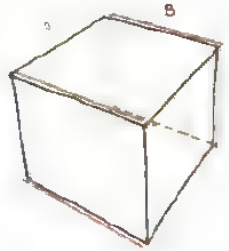
Does that make sense? I've shown you some incorrect examples and explained how to fix them, so try to review and apply what you've learned and you'll master it in no time. Let's look at the next condition.



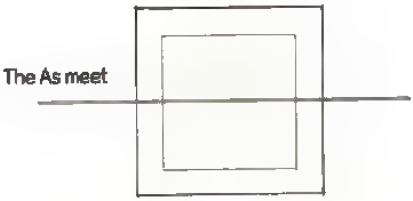


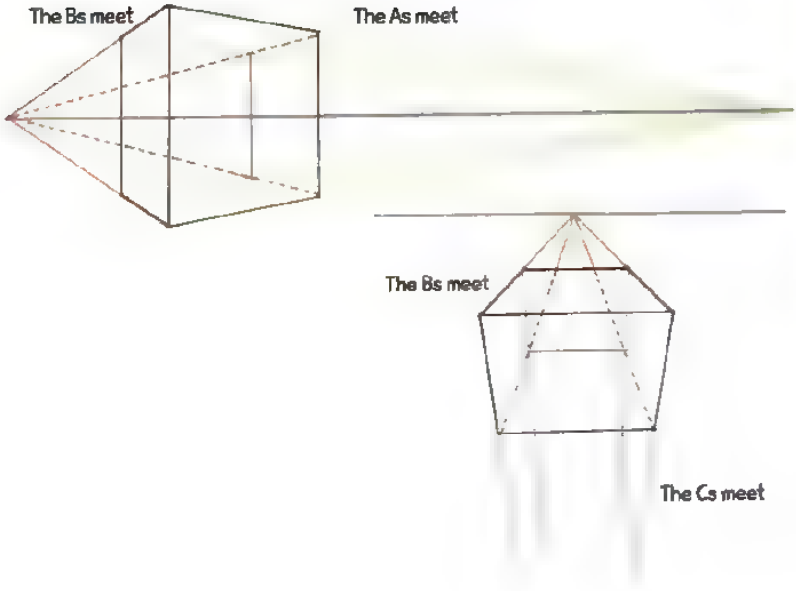
Let's practice with solid geometries whose sides all have right angles.



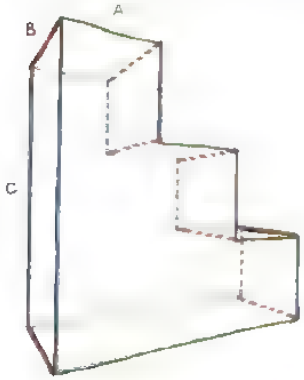


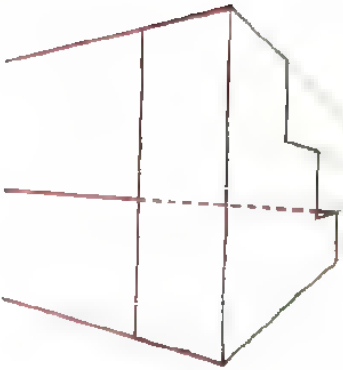
To draw a cuboid in the correct perspective, you can see three sides: A, B, C. In this cuboid, there are four of each sides (including the ones that are invisible). These three sides always meet at one point.

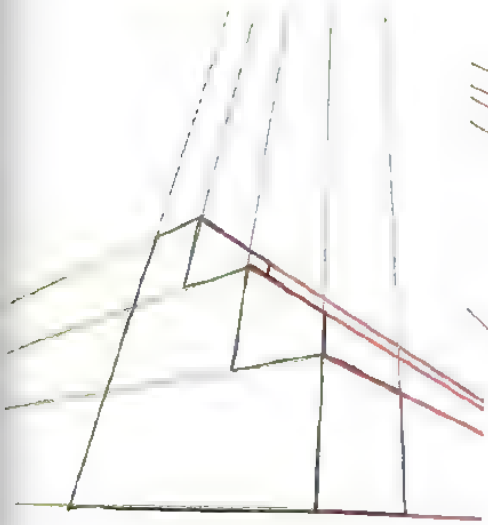


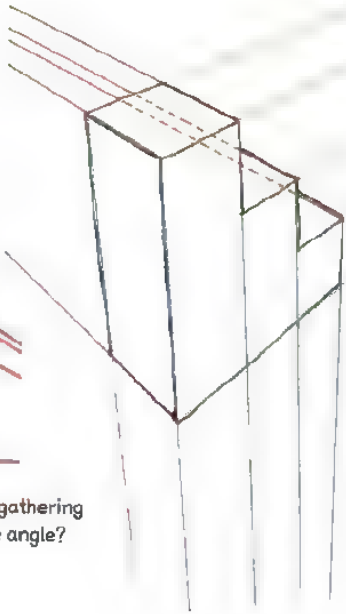


Let's take a look at how
parallel lines meet in modified figures.

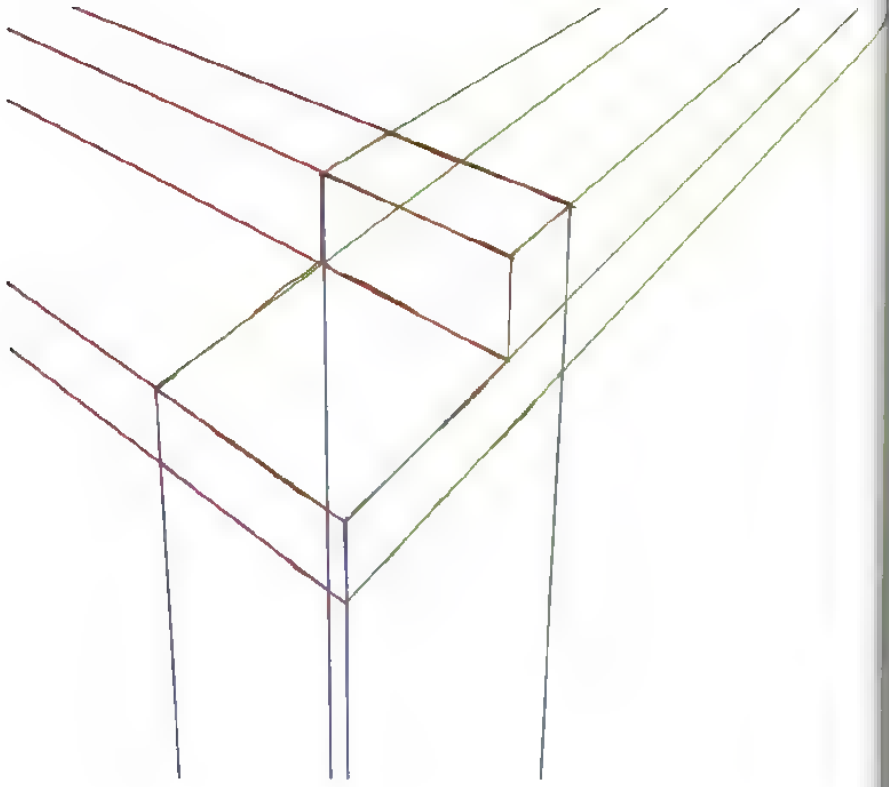


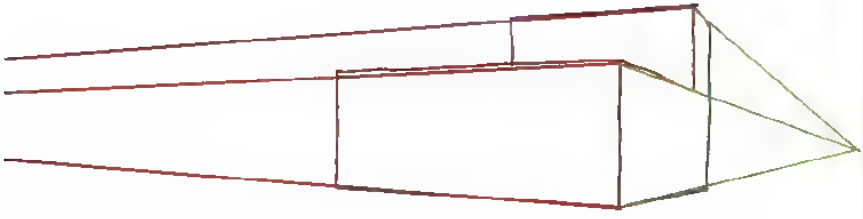


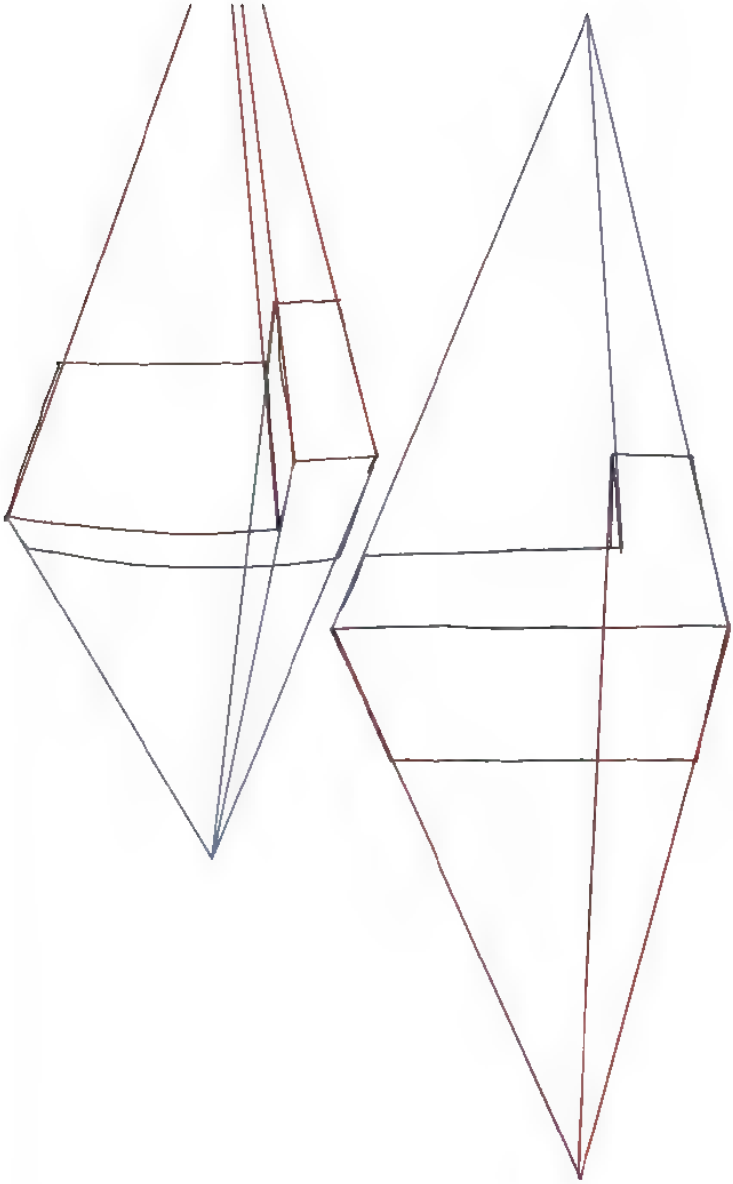




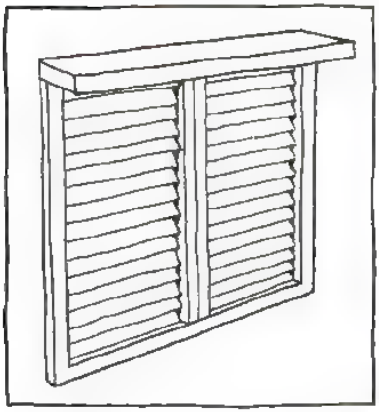
Do you see all the parallel lines gathering
towards one point, no matter the angle?

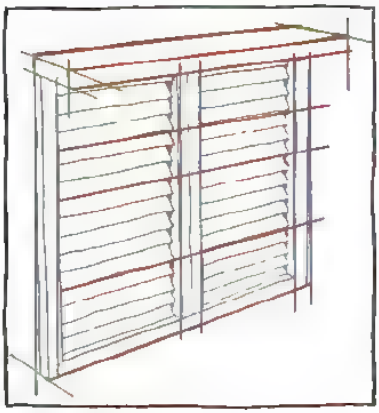




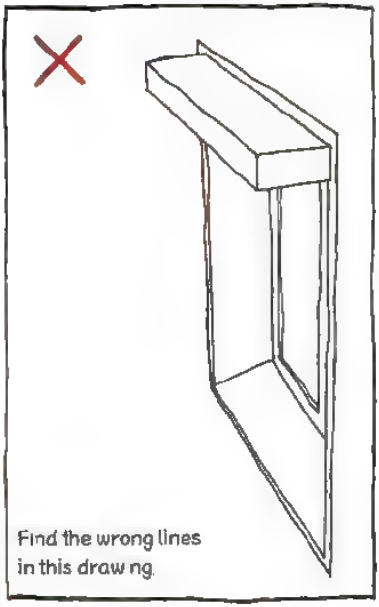


This is something we'll come back to over and over again. For objects with many intersecting lines, like a window, there's a very high chance that you'll draw it wrong. Continue to practice finding parallel lines.

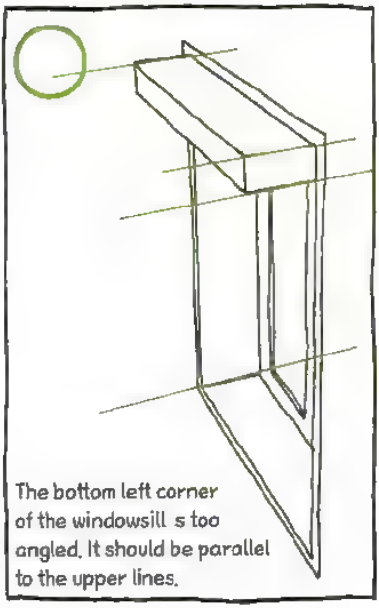




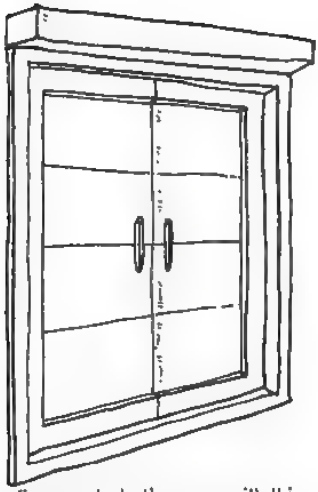
Let me go over some common mistakes.



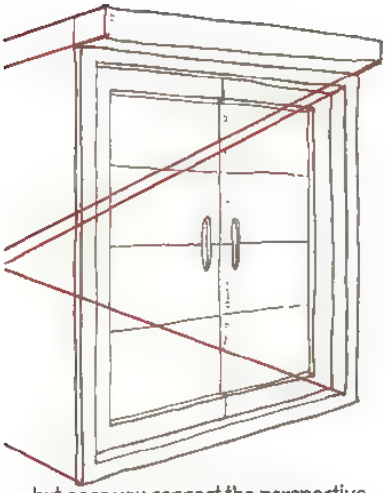
Find the wrong lines in this drawing.



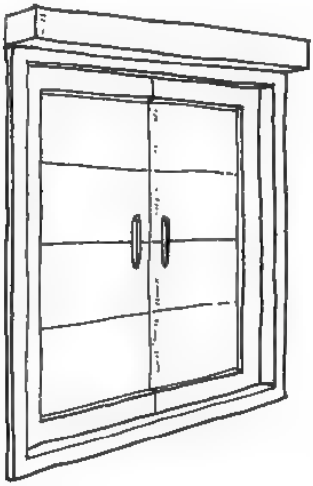
The bottom left corner of the windowsill is too angled. It should be parallel to the upper lines.



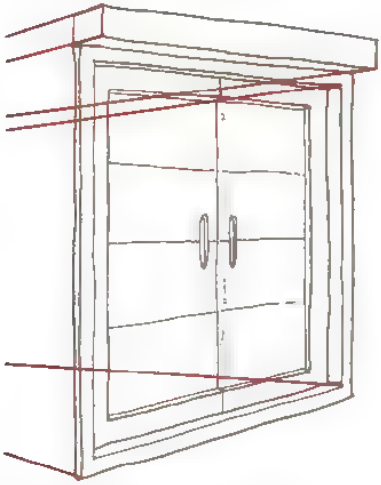
Shall we figure out what's wrong with this windowsill? At first glance, nothing seems wrong...



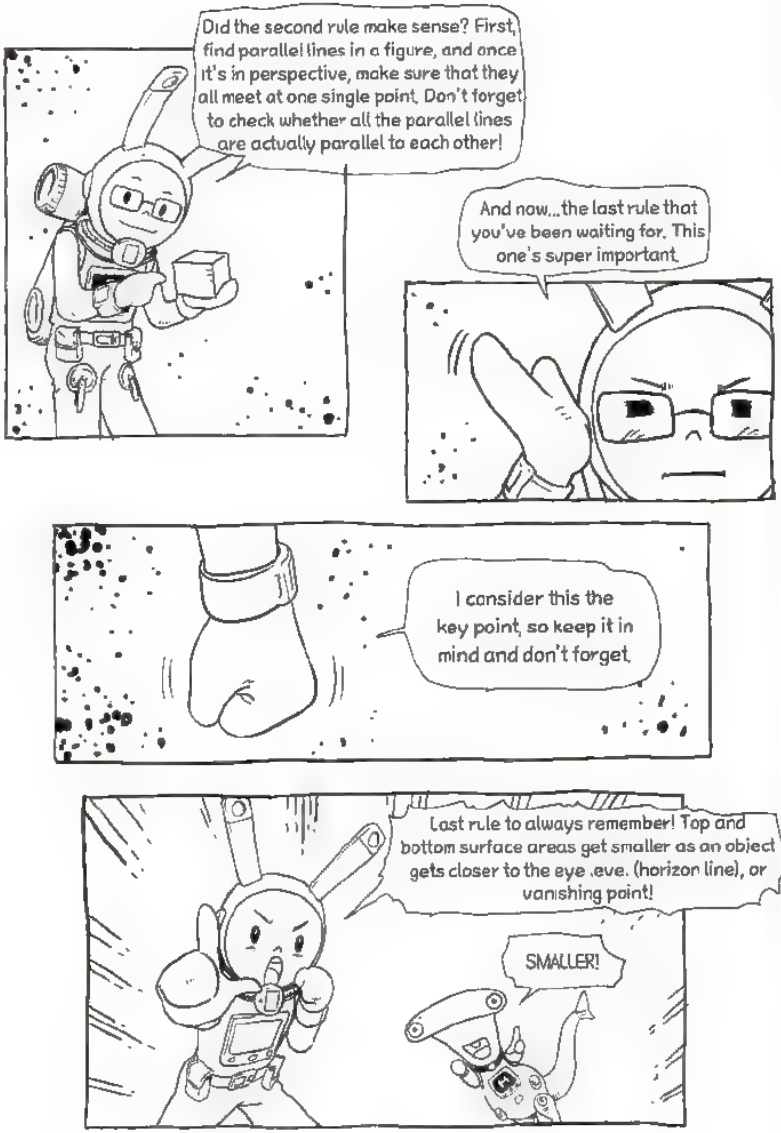
but once you connect the perspective lines, they're going in all directions.

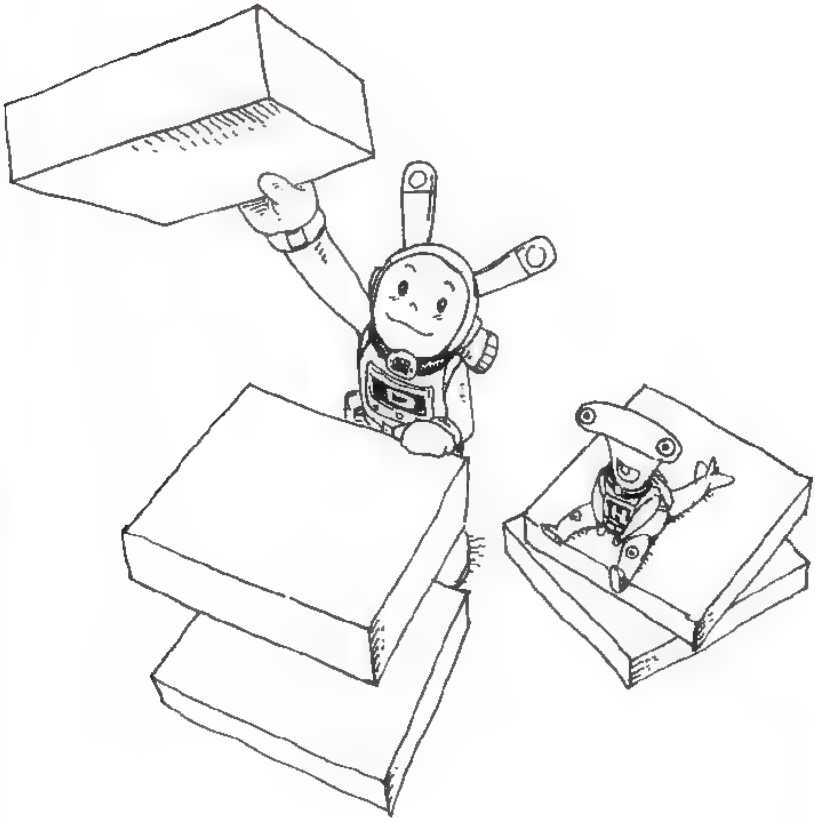


This is the correct version.

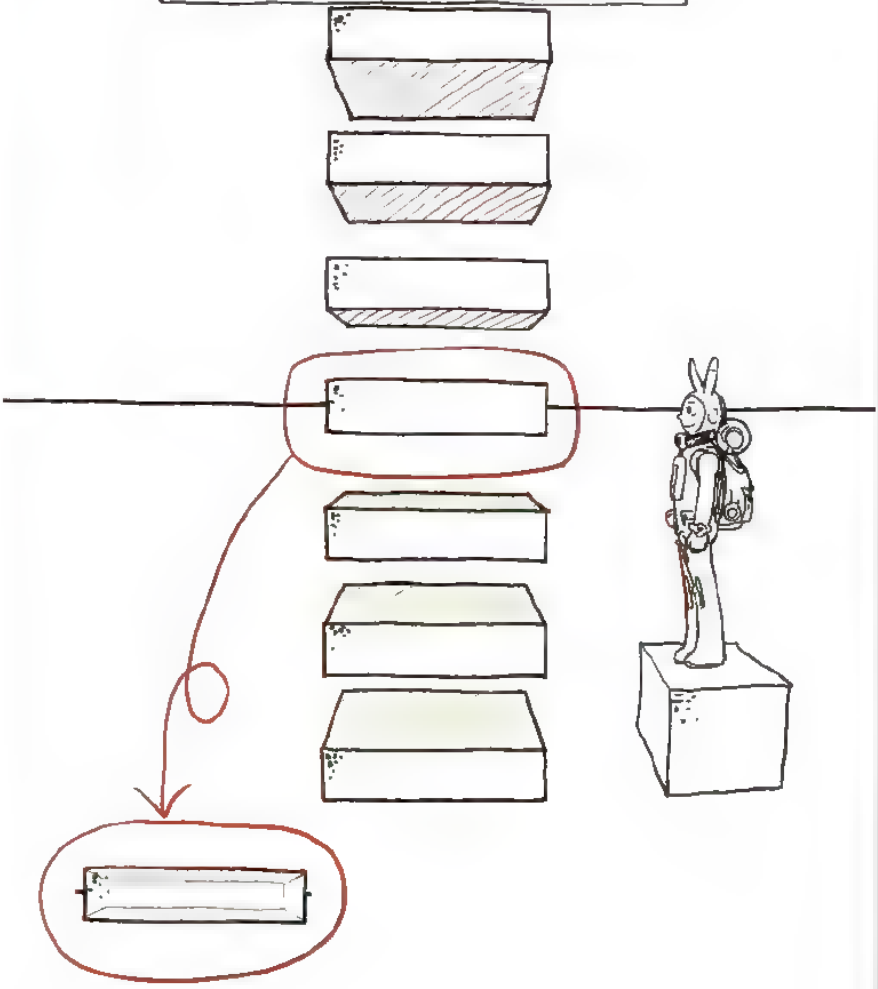


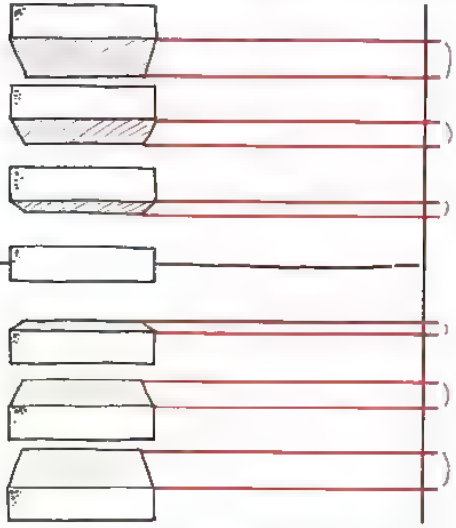
The perspective lines naturally gather towards one point. Always make sure that all parallel lines move in the same direction. Often people make mistakes with the smaller lines, not the bigger frame.


Did the second rule make sense? First, find parallel lines in a figure, and once it's in perspective, make sure that they all meet at one single point. Don't forget to check whether all the parallel lines are actually parallel to each other!
And now...the last rule that you've been waiting for. This one's super important.
I consider this the key point, so keep it in mind and don't forget.
Last rule to always remember! Top and bottom surface areas get smaller as an object gets closer to the eye .eve. (horizon line), or vanishing point!
SMALLER!



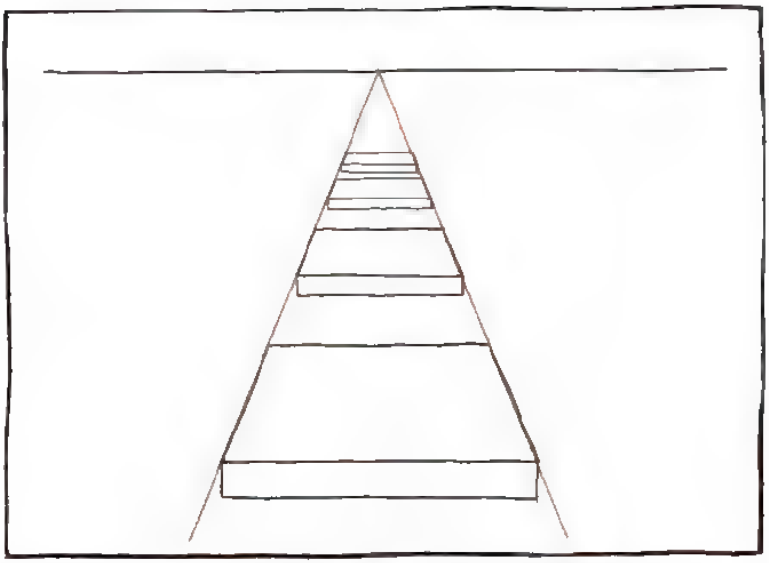
Let's draw some flat tiles. You can see that the tiles that are above eye level show their undersides, and the ones that are below eye level show their top sides. As for the tile that is right at eye level, if you were to look through it, you would be able to see the top and underside.

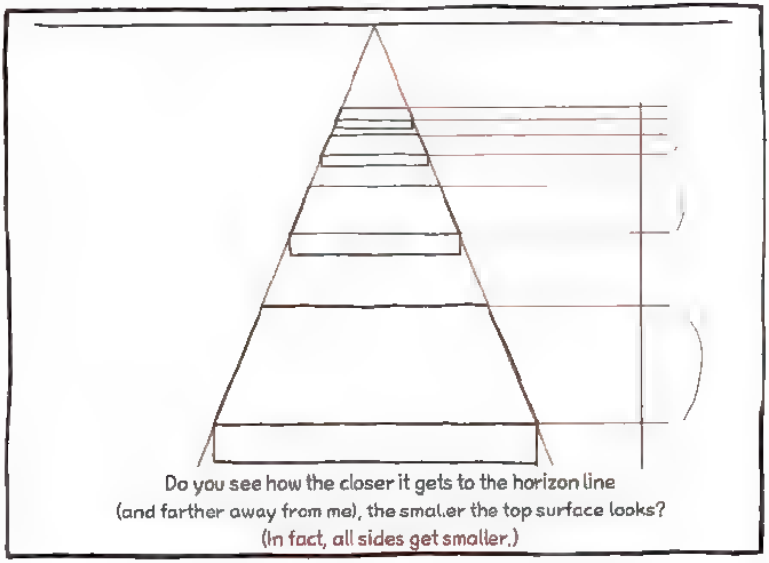




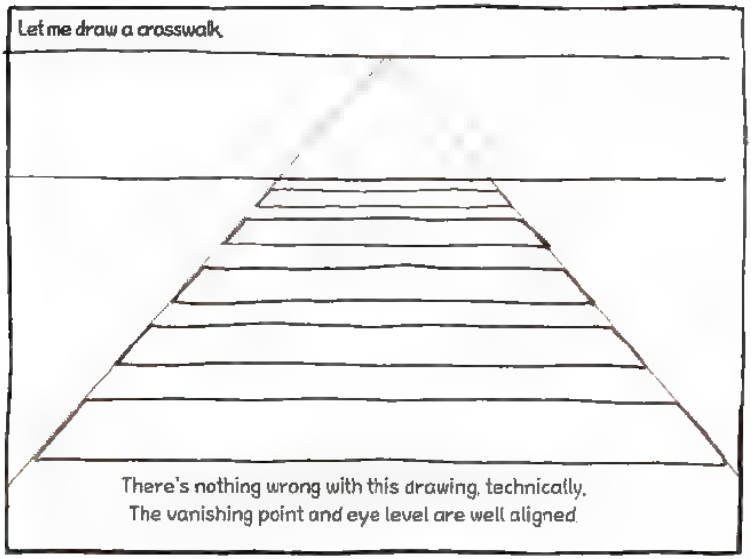
Do you see how the top and bottom surfaces look smaller as the tile gets closer to the eye level? I guess you could also say that it appears to be thinner.

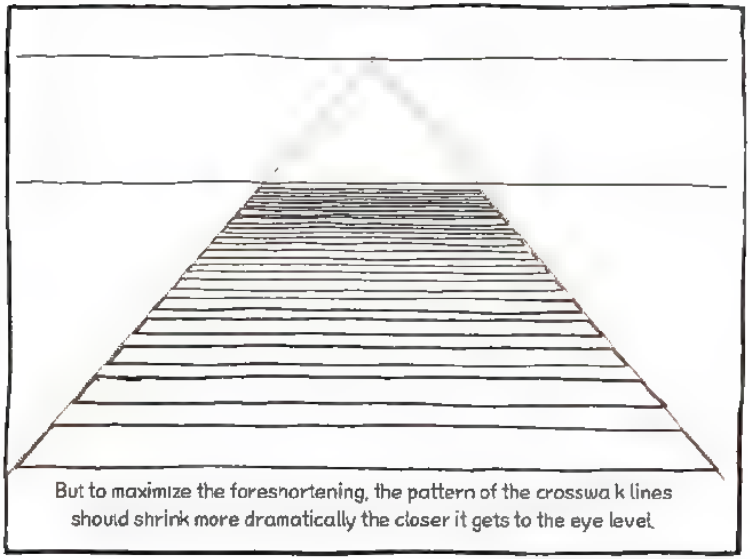
This time, let me line them up away from me.



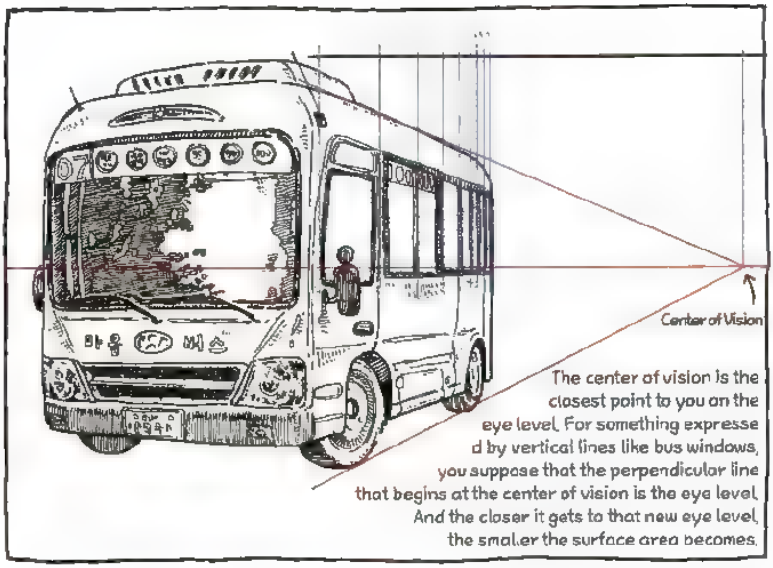


Do you see how the closer it gets to the horizon line
(and farther away from me), the smaller the top surface looks?
(In fact, all sides get smaller.)

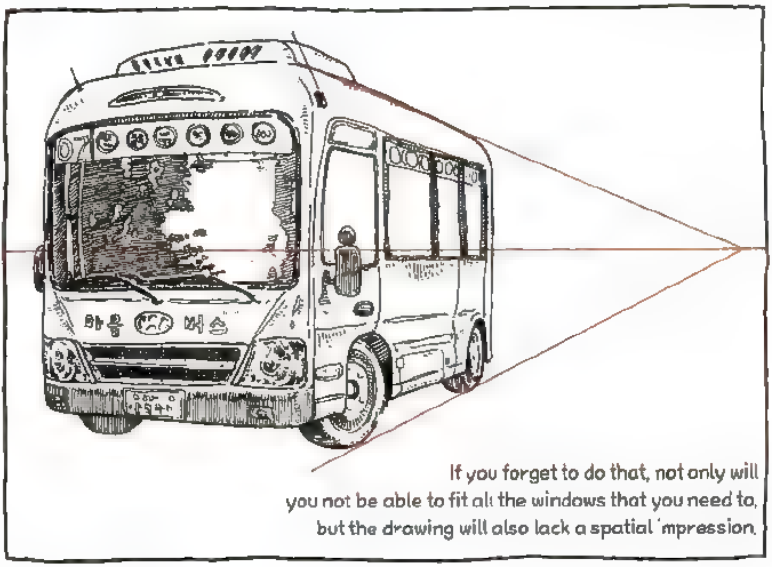




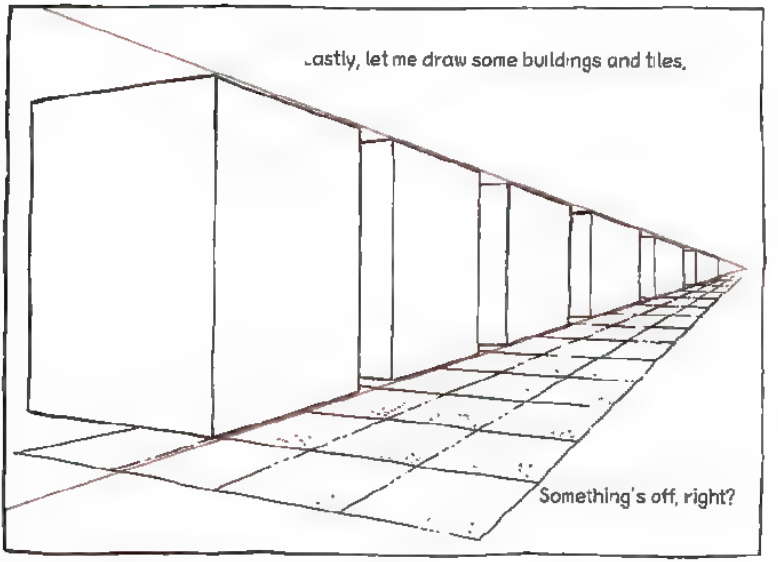
I explain how and how much to shrink in page 196.

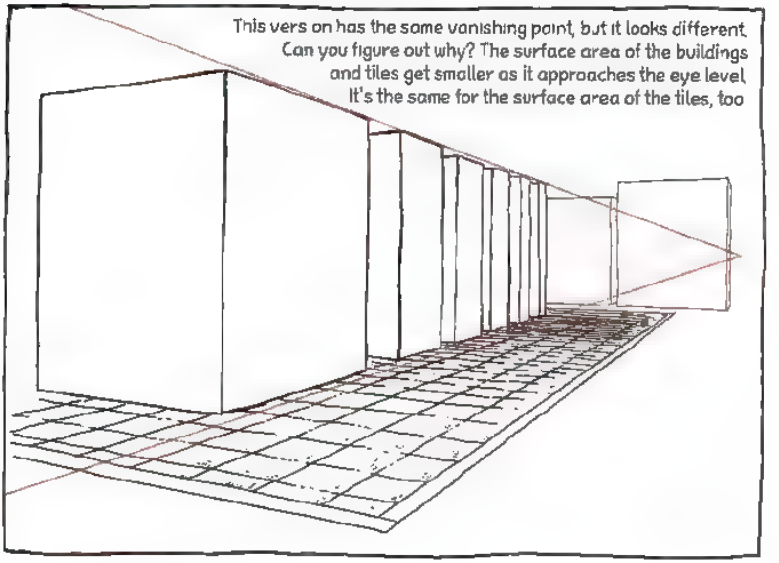


The center of vision is the closest point to you on the eye level. For something expresse d by vertical lines like bus windows, you suppose that the perpendicular line that begins at the center of vision is the eye level. And the closer it gets to that new eye level, the smaller the surface area becomes.

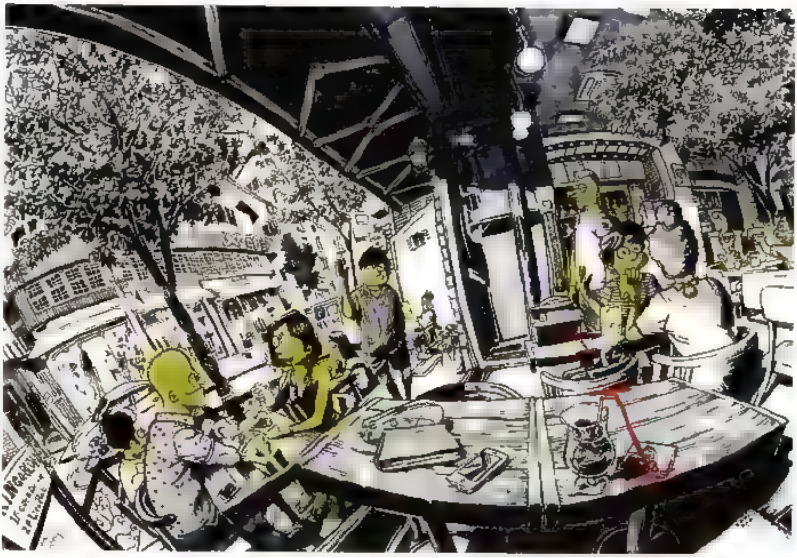


If you forget to do that, not only will you not be able to fit all the windows that you need to, but the drawing will also lack a spatial impression.

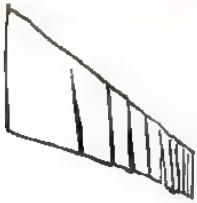

Lastly, let me draw some buildings and tiles.
Something's off, right?


This vers on has the same vanishing point, but it looks different.
Can you figure out why? The surface area of the buildings
and tiles get smaller as it approaches the eye level.
It's the same for the surface area of the tiles, too

Here's an example of that rule being applied in an exaggerated way.

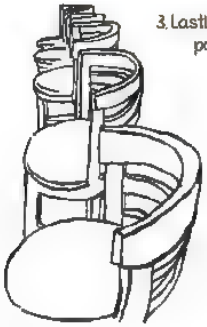


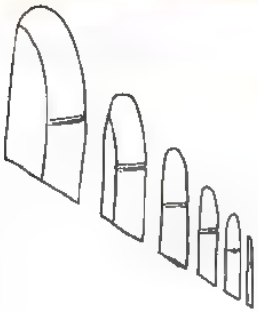
You can see the top surface of the table getting s gnificantly smaller as it moves farther away from the point of view.



Let's try to apply all three rules at once.

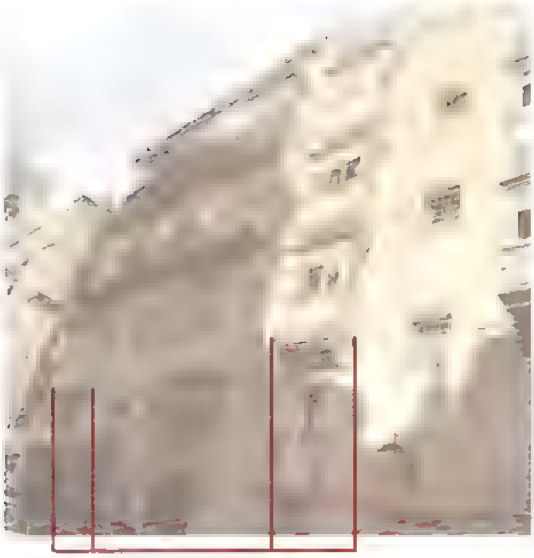
1. As the chairs and the curtains move away from the point of view, they get closer to the eye level.
2. And since all the chairs are parallel to each other they start moving towards one point. Same for the curtains, too.
3. Lastly, the farther an object is from the point of view, the smaller its surface area gets.





Let's review this a few more times so that we're not confused.

It might not look like it at first glance, but there's quite a bit of a difference. The surface area gets smaller as it approaches the vanishing point.



Certainly, the same amount of time is given to everyone. I always ponder what I should do with that time. Should I sketch boats floating on the water, or go swimming, or nap, or work, or order some fried chicken, or just go home? There's no way of knowing what the better or worse choice is, but consequences follow every decision and action. And those consequences become a part of who I am. And all these other people make different choices and thus exist in their unique selves as well. And they'll go on to ponder as they watch each other...

2017.06 KIM DONG-HO

For everyday or travel scenes, make use of parallel and repeating objects to express spatiality.

My values and stereotypes break like the waves crashing on the pier.
My countless stray thoughts disappear like the skyline that fades away along the horizon.
I sketch on the Santa Monica Pier, oblivious of the sunburn settling on my ears and the back of my neck.

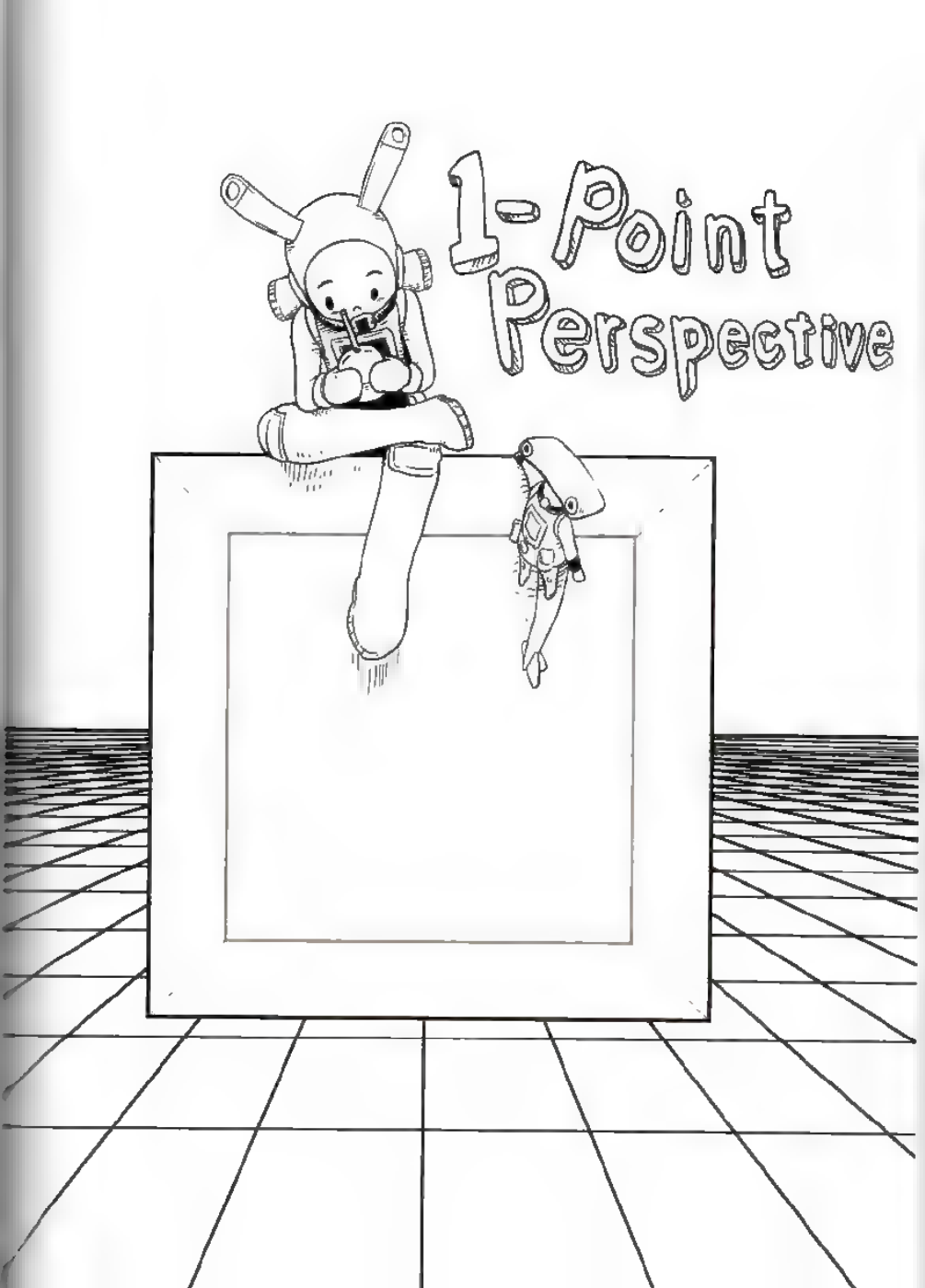
2017.11 KIM DONG-HO

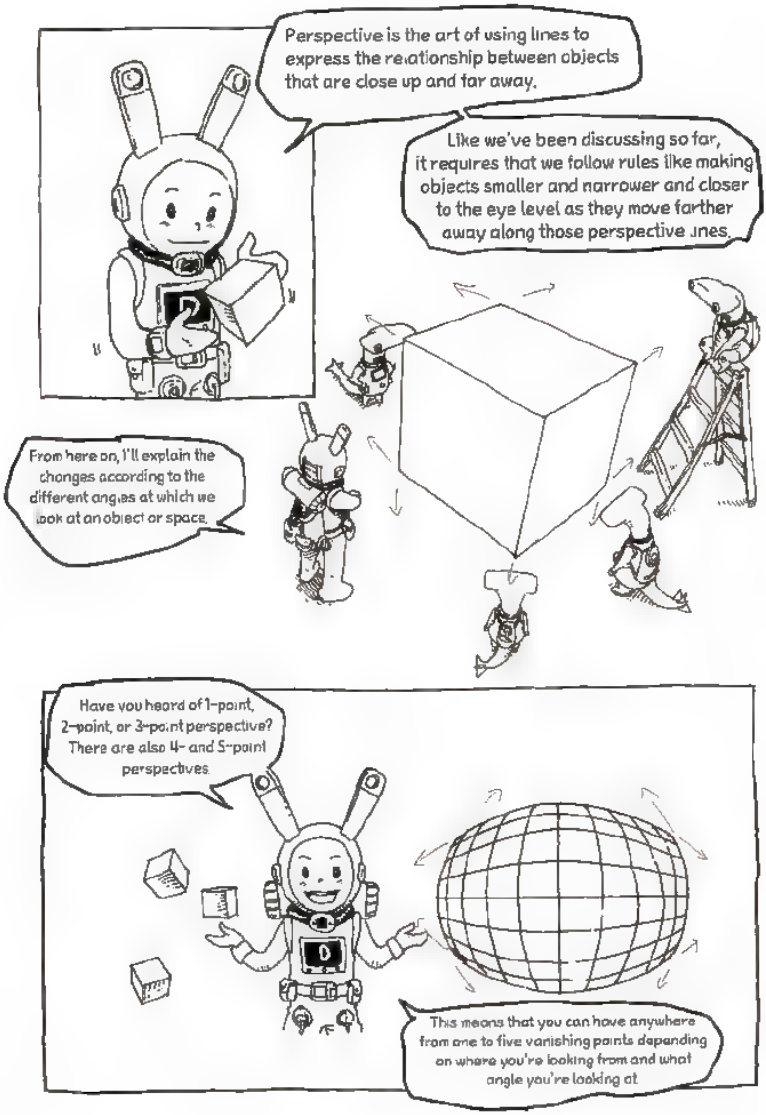
Malta, the little treasure
island of the Mediterranean.

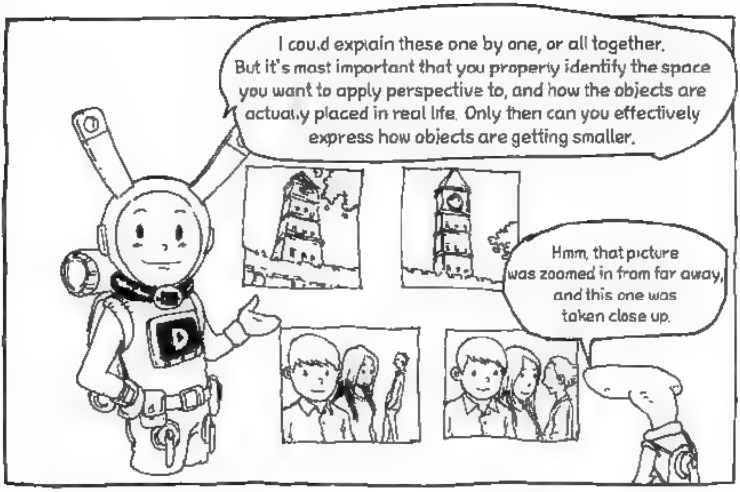
Set a goal
and work for it
desperately,
desperately,
Ever so desperately.

20141225
KIM DONG-HO
MERRY CHRISTMAS!!!!!!

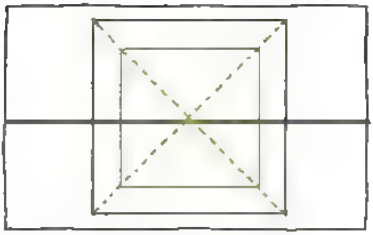
PERSPECTIVE FROM DIFFERENT ANGLES

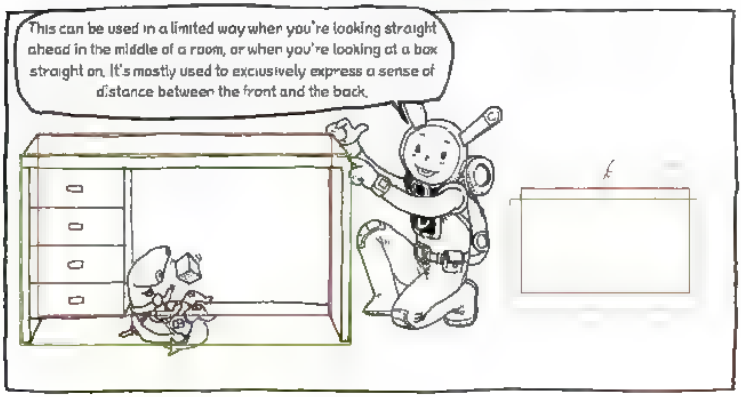

1-Point
Perspective

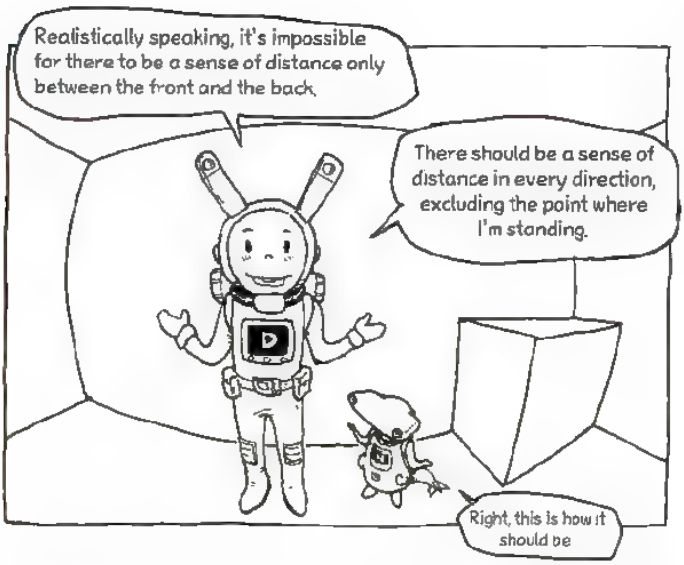

Perspective is the art of using lines to express the relationship between objects that are close up and far away.
Like we've been discussing so far, it requires that we follow rules like making objects smaller and narrower and closer to the eye level as they move farther away along those perspective lines.
From here on, I'll explain the changes according to the different angles at which we look at an object or space.
Have you heard of 1-point, 2-point, or 3-point perspective? There are also 4- and 5-point perspectives.
This means that you can have anywhere from one to five vanishing points depending on where you're looking from and what angle you're looking at.

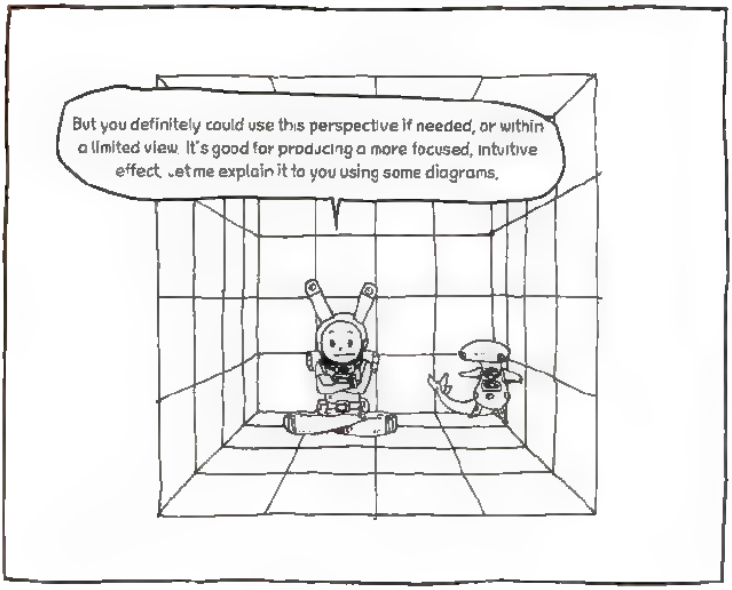


A 1-point perspective is when all perspective lines gather at one single point in the middle.

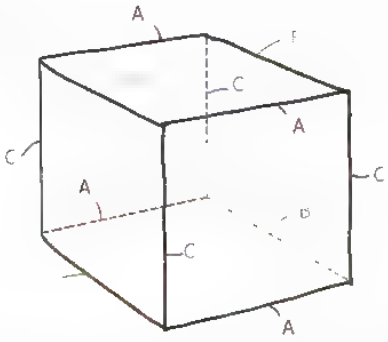




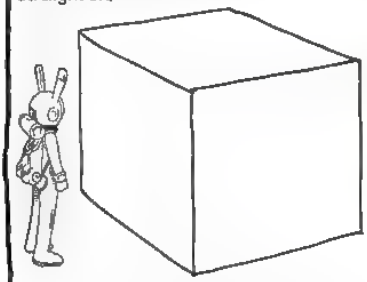

Realistically speaking, it's impossible for there to be a sense of distance only between the front and the back.
There should be a sense of distance in every direction, excluding the point where I'm standing.
Right, this is how it should be


But you definitely could use this perspective if needed, or within a limited view. It's good for producing a more focused, intuitive effect. Let me explain it to you using some diagrams.

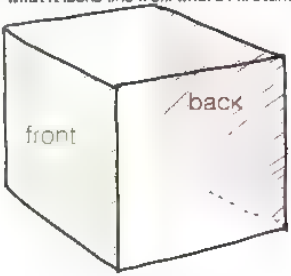
Let's start by identifying parallel lines. There are three sets of four.

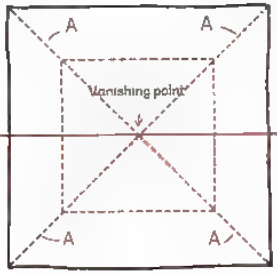


The 1-point perspective applies if I were to look at this box shape straight on.

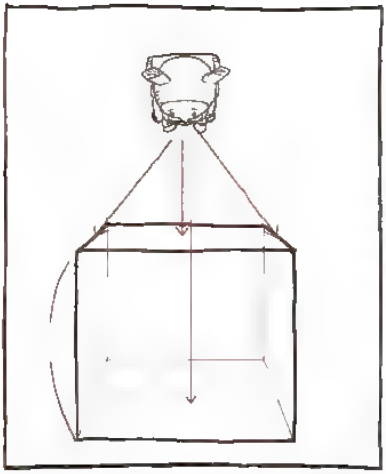


You can distinguish the close side from the far side. The 1-point perspective is used to express a sense of distance between these two sides. Let's see what it looks like from where I'm standing.

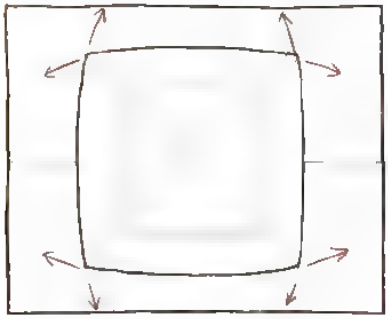




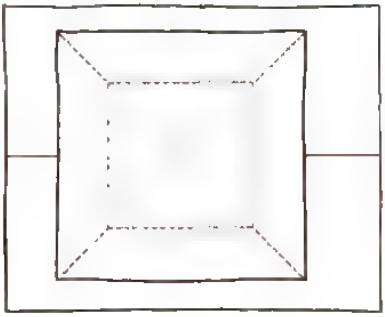
Naturally, the back side is smaller. And the A-lines, which connect the front and the back, move towards the center. If you extend those lines (aka perspective lines), they meet at one point to become the vanishing point. And like I mentioned earlier, the vanishing point must exist somewhere on the eye level.



Let me clarify something here. I said that this perspective expresses a sense of distance between the front and the back, but the center of the front side is the real closest point to me.



So if I really wanted to apply all the principles, I need to draw the lines so that they are moving toward each other—to the left and right, up and down.



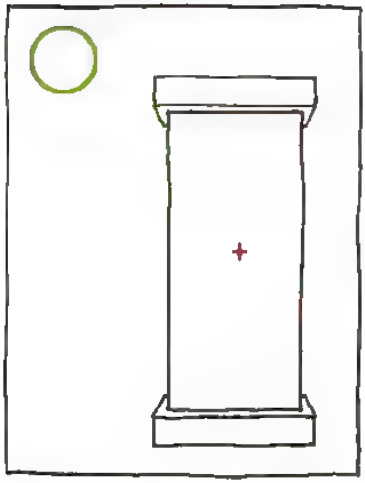
But we're drawing with straight lines under the circumstances that we're using a 1-point perspective and that the curving of the lines is not very noticeable.

Let's go ahead and draw more boxes that share the same vanishing point.

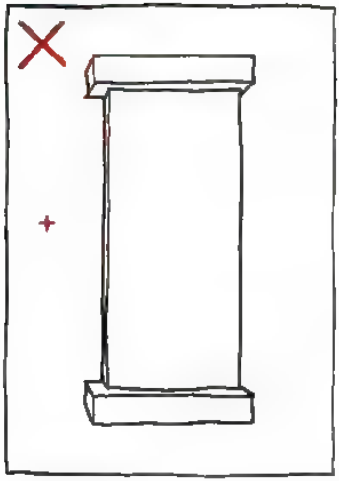
You can see that the cube becomes more distorted the farther out it's placed? Although I followed the perspective lines defined by the middle cube, it starts looking too long very quickly once it strays from the straight-on angle.

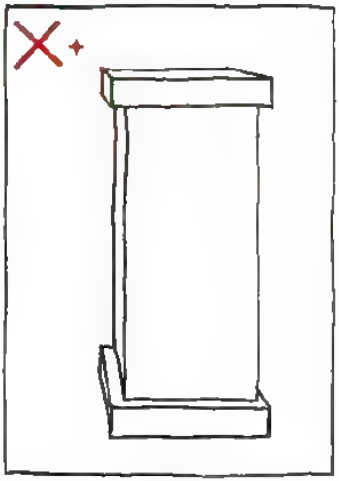
What should we do in this case, then? I'll continue the explanation a bit later, in the fisheye lens chapter.

When using a 1-point perspective, it's best not to stray too far from a limited angle of view, such as a straight-on room or alley.



If the vanishing point is in the middle of an object, there is symmetry, and with it, a sense of stability.

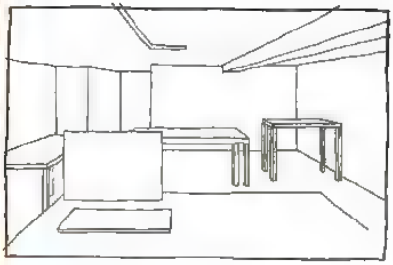




These two examples also have a 1-point perspective, but they've lost their symmetry and gained distortion in the corners because their vanishing points are off-center

Try it out for yourself. No matter how well you stick to the perspective lines, it'll still look awkward.

~ Draw it yourself!

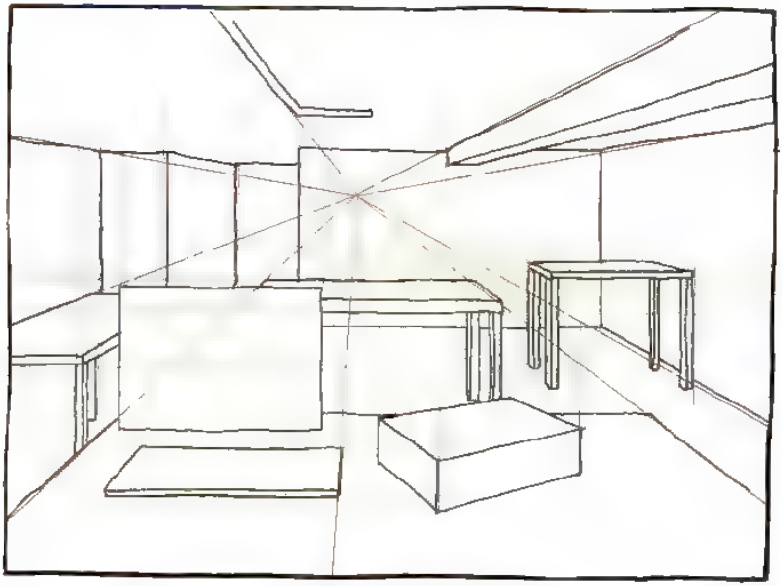


A

B

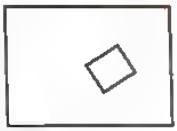
C

Let's find the eye level
and vanishing point.

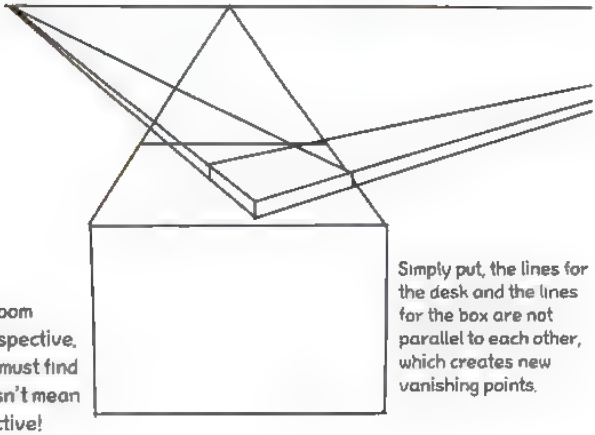


Wait!!

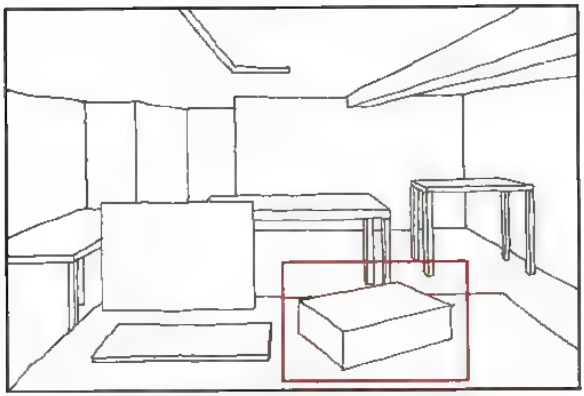
What if there was a box on the table like this, positioned at an angle?



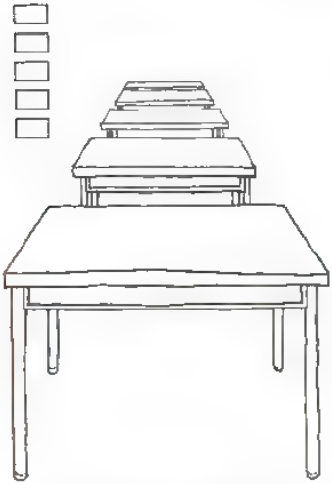
Since we're looking at the room straight-on, this is a 1-point perspective. But the box is at an angle, so we must find its vanishing points. But this doesn't mean that this is a 3-point perspective!



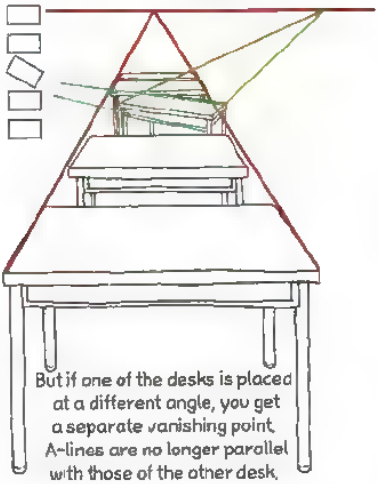
Simply put, the lines for the desk and the lines for the box are not parallel to each other, which creates new vanishing points.



Practice by changing the angles for other objects, such as the desks in the background.
Let me give you another example using desks.



As you can see in the floor plan, the desks are arranged to be parallel with each other, so you get one vanishing point.



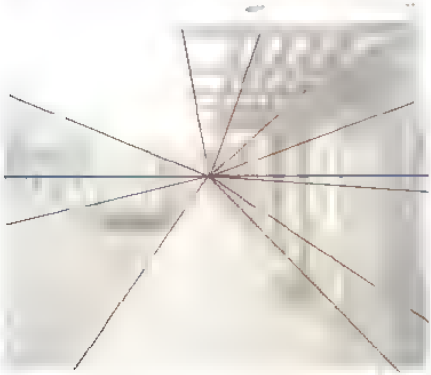
But if one of the desks is placed at a different angle, you get a separate vanishing point. A-lines are no longer parallel with those of the other desk.

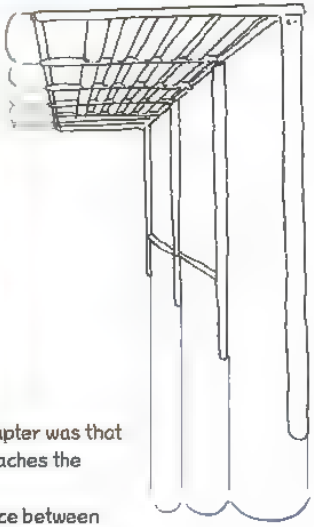
We'll rev ew this part over and over again, but don't panic if you discover another vanishing point that's separate from the one you're expecting.

And don't forget that the vanishing point must exist at eye level as long as the object is properly placed on the ground.

Now that you have a better understanding of a 1-point perspective, let's look at some tips on how to maximize the sense of distance.

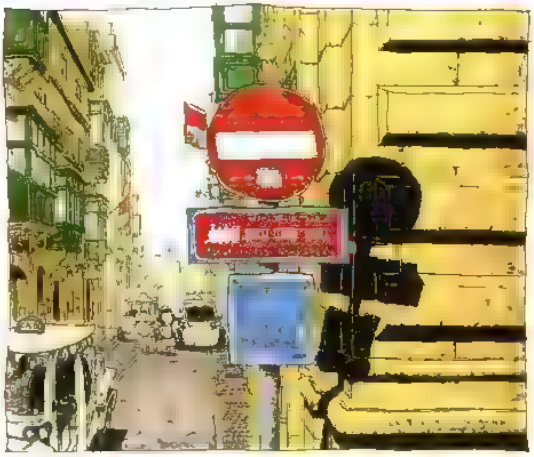
First, find the eye level and vanishing point.

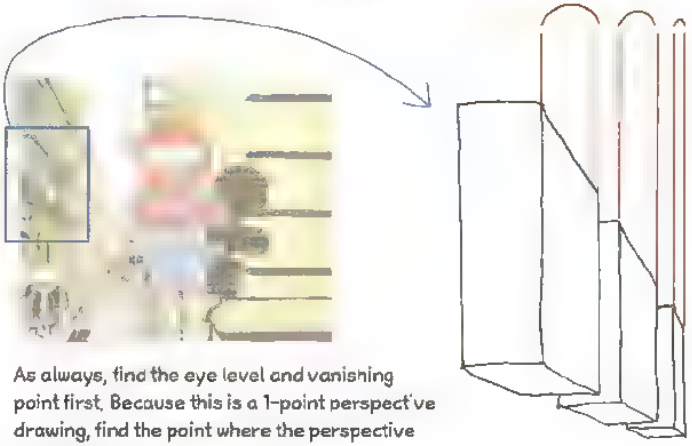




The last rule that I emphasized in the previous chapter was that the surface area gets smaller as an object approaches the vanishing point (eye level). Remember that?
If you look at the bus stop, you see that the distance between the bars appears to get smaller towards the back. The same is happening with the paving blocks. Areas closer to the point of view tend to show a greater contrast.

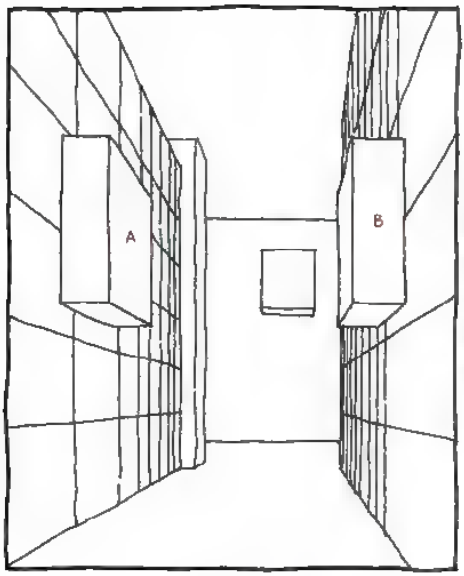
This is a drawing of Valletta, the capital of Malta.
The cute balconies mark its architectural style.
Here you can make the balconies in the back gradually look smaller to express a sense of distance.



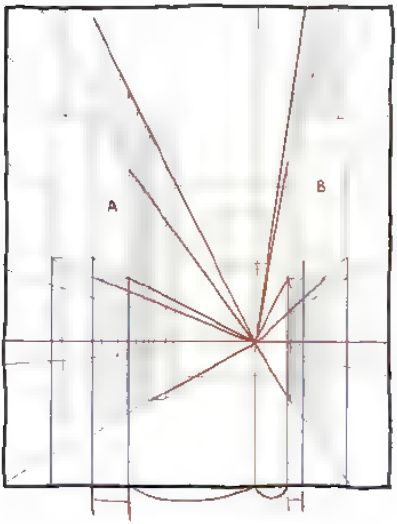


As always, find the eye level and vanishing point first. Because this is a 1-point perspect've drawing, find the point where the perspective lines meet.

And let me take just the balconies and geometricize them.

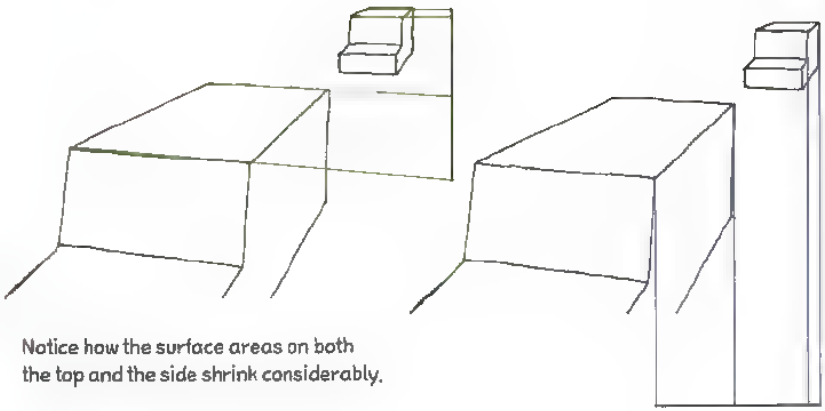


This is a little different from the original drawing, but here are two balconies that are facing each other. They are at different distances from the center. A is farther away than B.



Even if they both follow the same perspective lines, B shows less surface area because it's closer to the vanishing point. Regardless of whether something is objectively closer or farther away, the closer it is to the vanishing point, the smaller its surface area is.

This time let me geometricize some cars.
Again, don't forget to align them to the vanishing point.

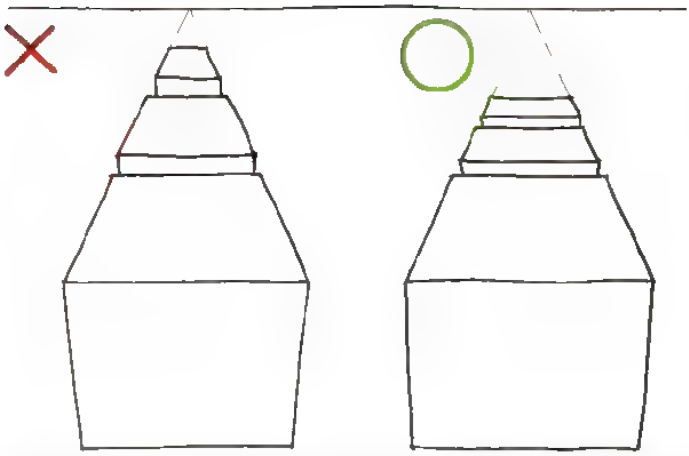


Notice how the surface areas on both
the top and the side shrink considerably.

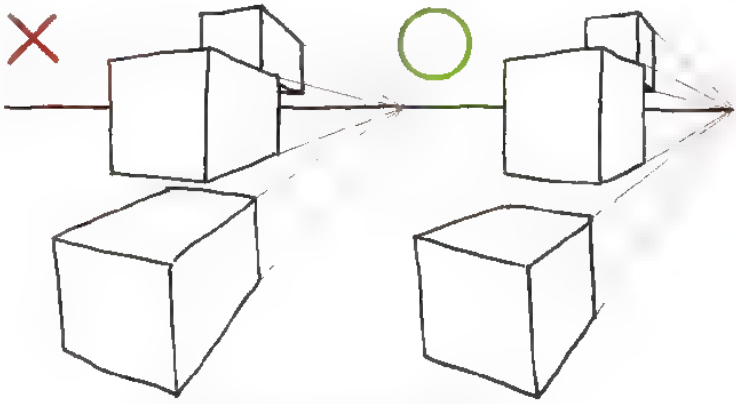
Here's a picture of a street in Malta that I specifically took straight-on. It's not too difficult to find the vanishing point and the horizon, right?

The windows on this building are so close to the center that they almost look stacked together. You can barely find surface areas. (Super narrow!)

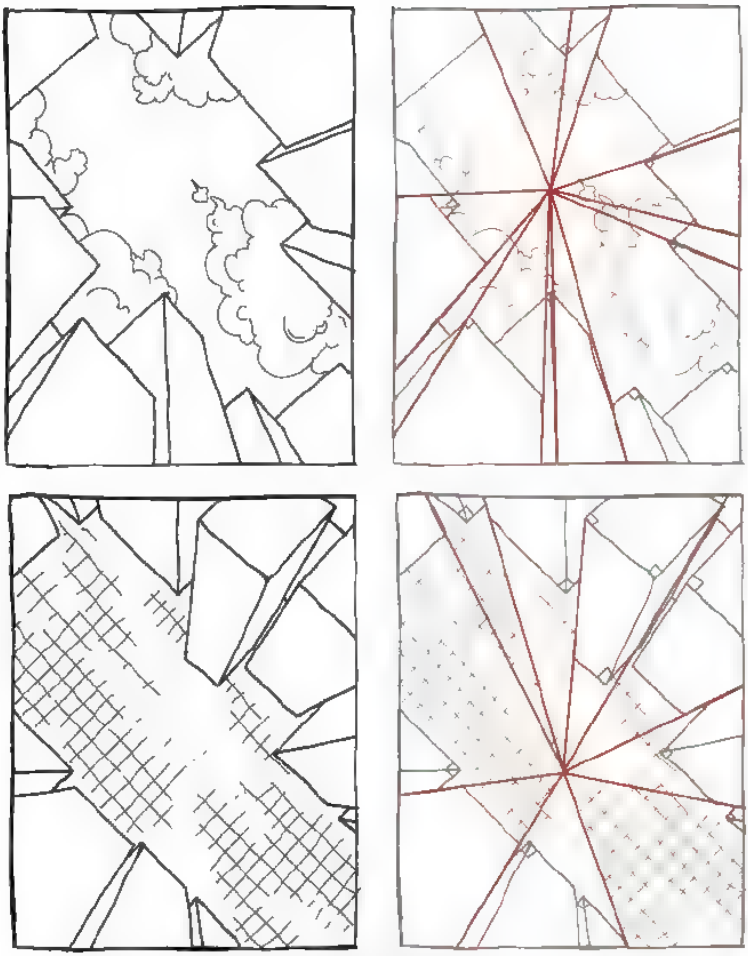
It might seem like we're repeating such a minor point over and over again, but this is actually one of the most common mistakes that people make. Please take the time to practice expressing depth and distance.



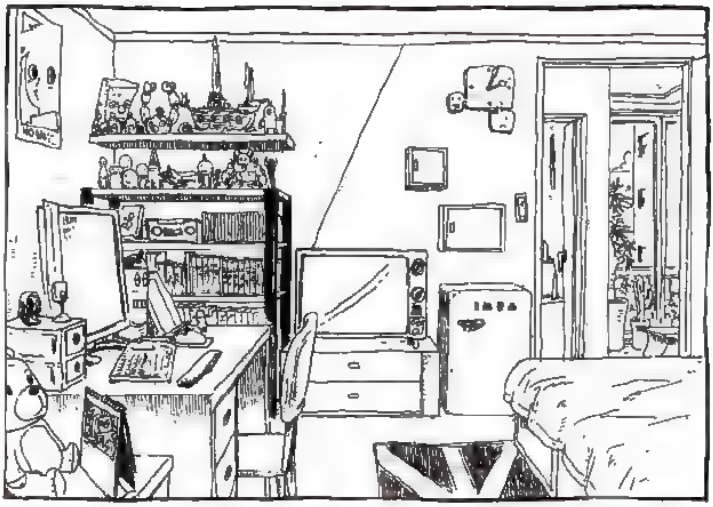
The farther back it is, the more dramatically you should shrink the depth of the surface. The horizon is hundreds -no, more than thousands of kilometers away from the point of view. If you have a cube that's closer to the point of view but then draw it too close to the horizon, it starts to look awkward. It no longer looks like a cube, but instead a long box.



And the cube that is farther away from the point of view doesn't look like a cube either
Shrink the surface area accordingly.



Here are some low angle and high angle drawings with a 1-point perspective. In this case, the eye level is in the sky and on the ground instead of the horizon.
Knowing that the vertical lines are perpendicular to the horizontal lines, you can see that the only vertical lines gather at one point.

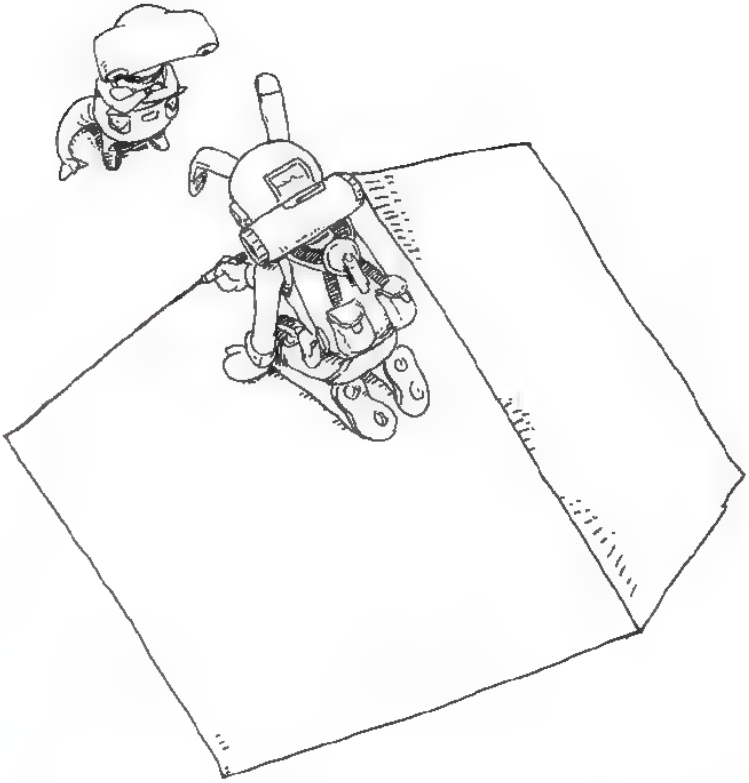


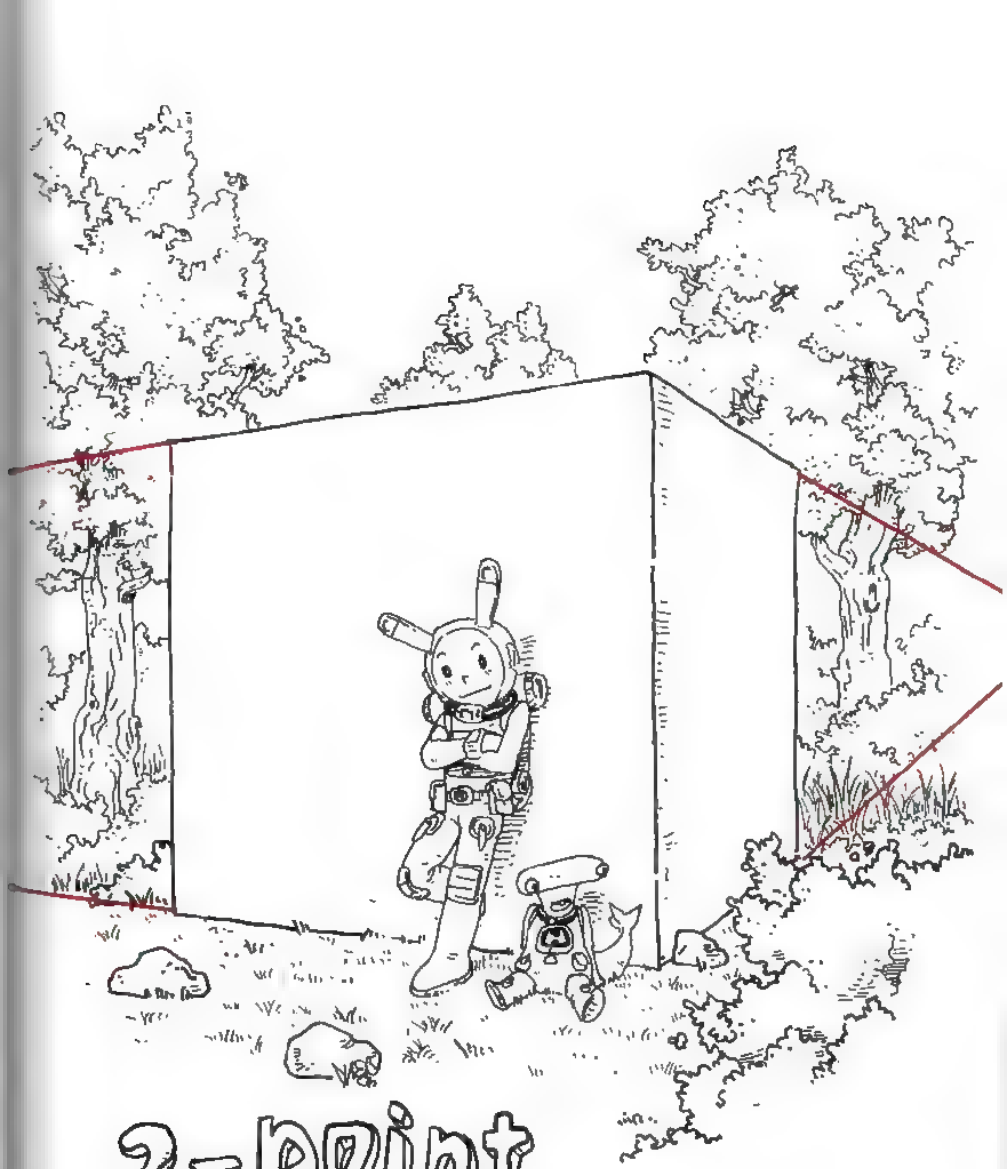
Let's try drawing your room. You can use your imagination. No need to draw complicated structures, such as your chair. The goal is simply to express a sense of space by arranging different objects up close and far away.

Here's an electrical wire box from a 1-point perspective. The distortion in the top left corner makes it look too long.

You might say that I could just make it shorter, but you'll realize once you try it yourself that distortion is inevitable once the vanishing point is off-center. And it's not like I can create multiple vanishing points, since all parallel lines must meet at one single point.

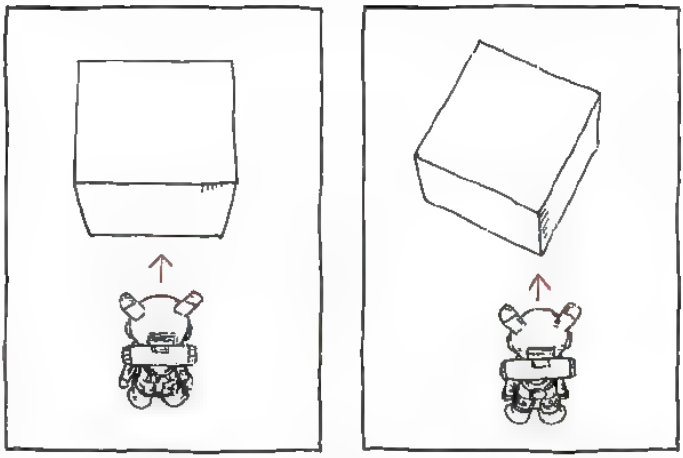
There is an incline in the ground, FYI.



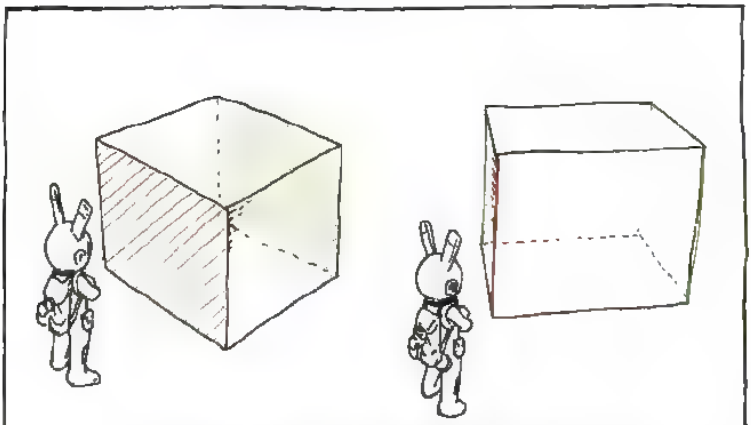


2-point perspective

2014

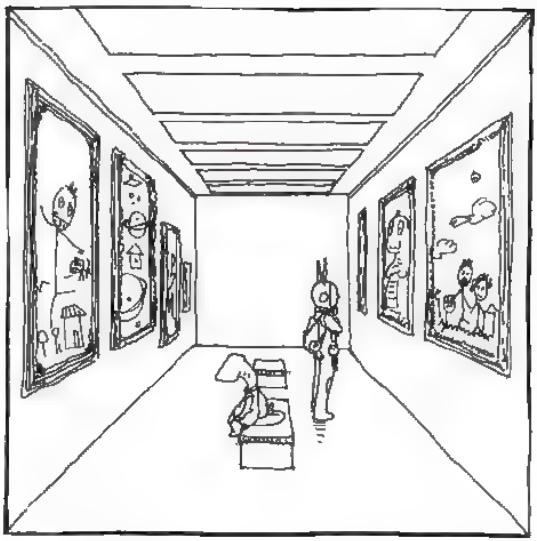


If a 1-point perspective was when you look at a space straight on, a 2-point perspective is for when you're looking at it from an angle.



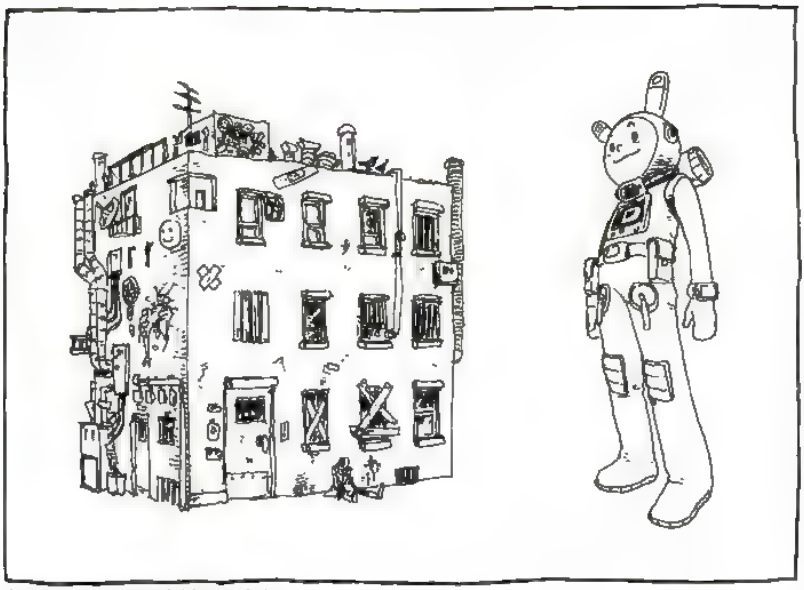
A 1-point perspective expresses only the distance between the front and the back, and a 2-point perspective expresses the distance between the left and right as well.

1-point perspective

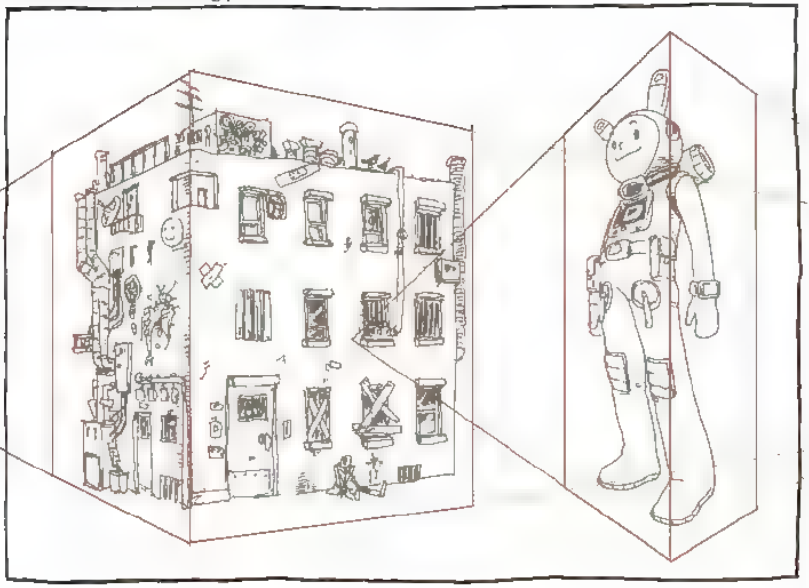


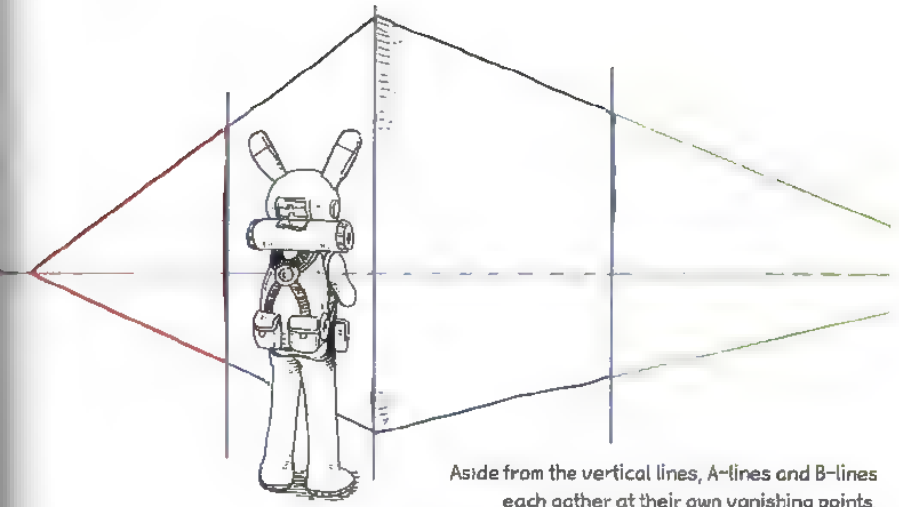
There is one vanishing point.

2-point perspective

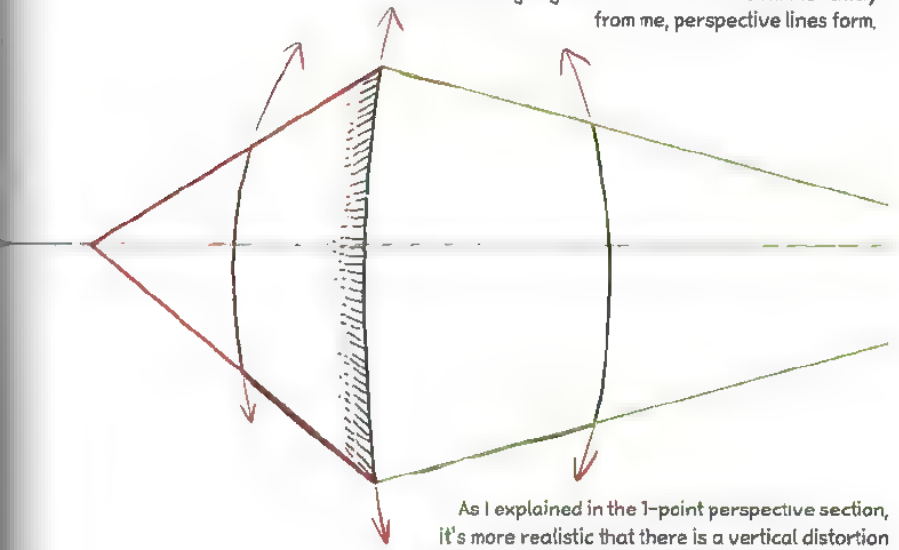


There are two vanishing points.

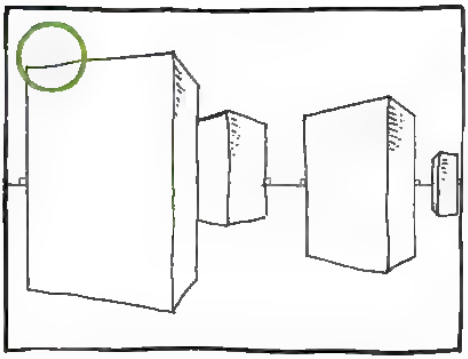




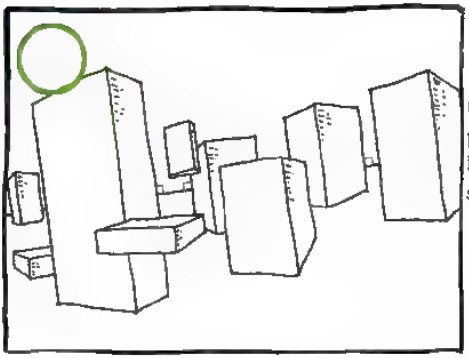
Aside from the vertical lines, A-lines and B-lines each gather at their own vanishing points. The middle edge is the one closest to me, and as the other edges grow shorter and move farther away from me, perspective lines form.



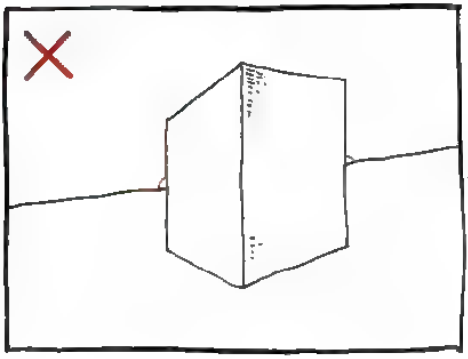
As I explained in the 1-point perspective section, it's more realistic that there is a vertical distortion as well, since the point of view is closest to the center. The 2-point perspective is another technique that is used in limited settings.



There is one thing to pay attention to when you draw box shapes. Because the vertical lines are parallel with each other and don't meet, make sure that every vertical line is perpendicular to the horizon.



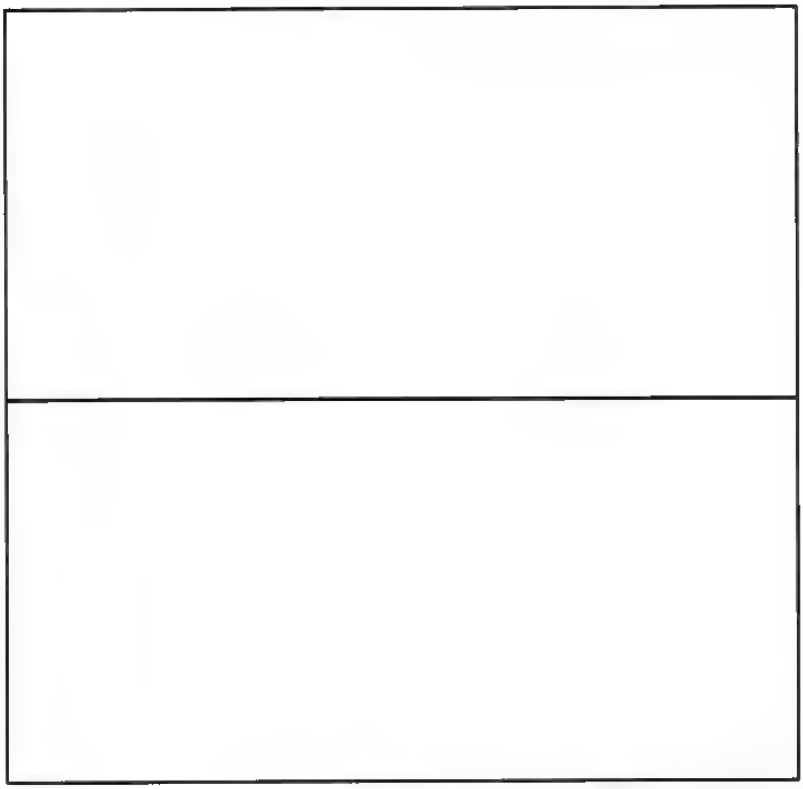
Even if the horizon is tilted, maintain the perpendicular angles. Tilting the horizon is one way to maximize the impression of space.



If the horizon is tilted, you also need to tilt the box accordingly.

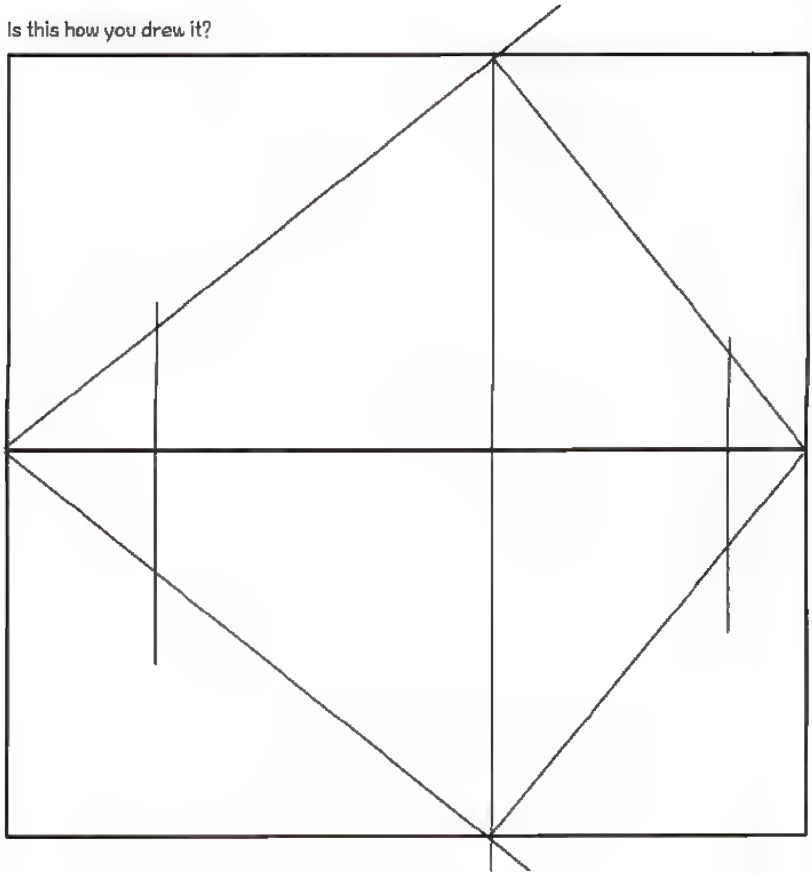
Let me test your understanding of the 2-point perspective.

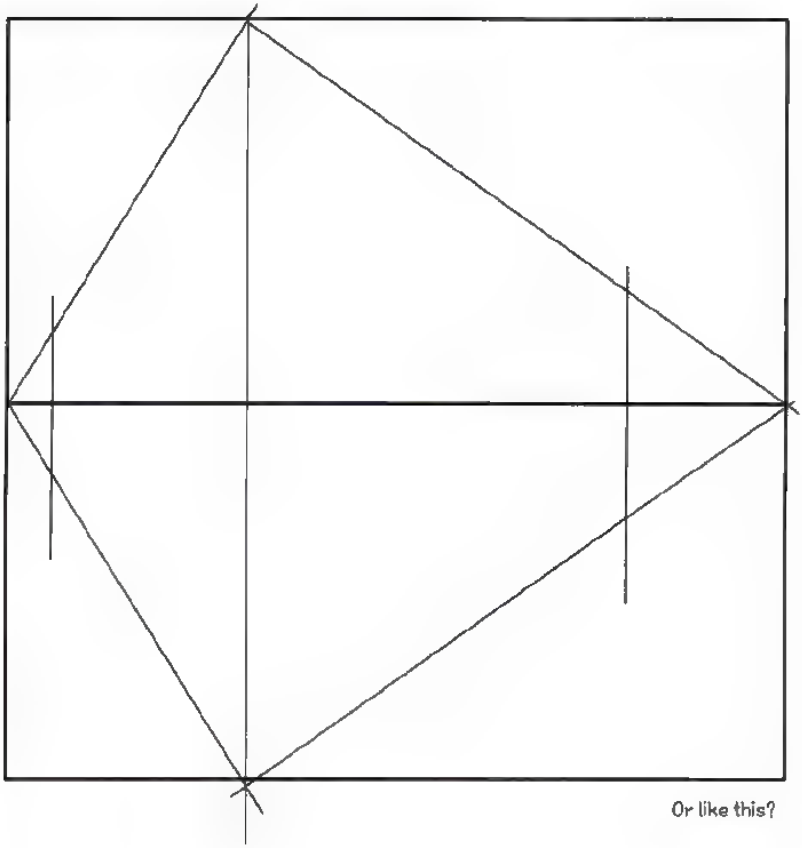
Using the horizon given to you below, draw a basic 2-point perspective box shape, as big as you can.



Don't skip this part. There's an important point to go over if you're a beginner.

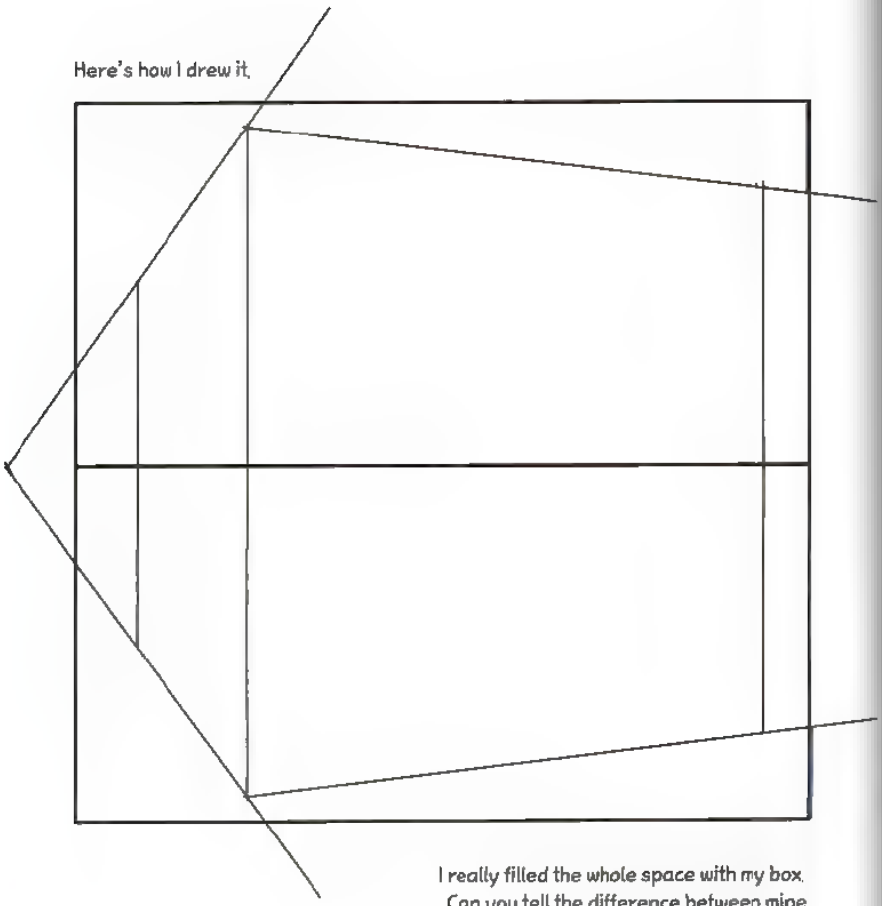
Is this how you drew it?



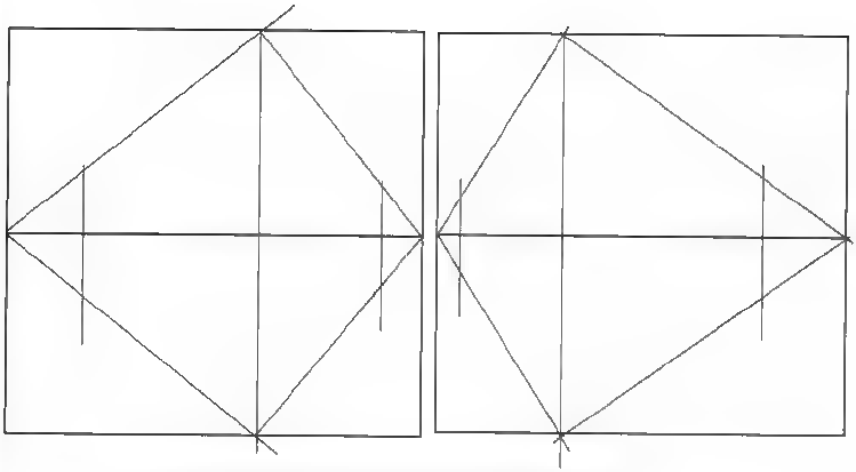


Or like this?

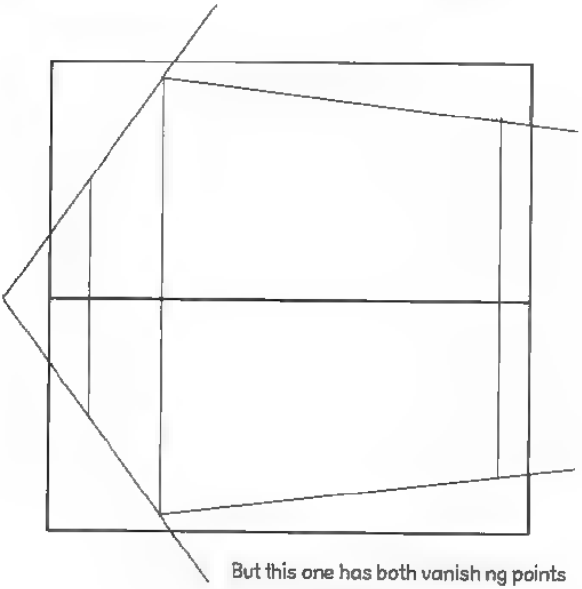
Here's how I drew it.



I really filled the whole space with my box.
Can you tell the difference between mine
and the first two examples?

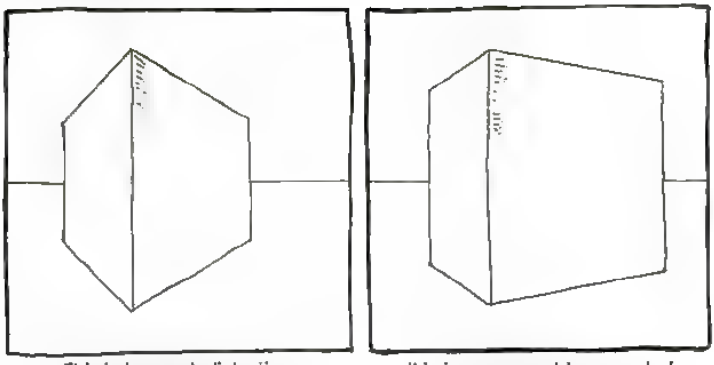


These two have both vanishing points within the paper.



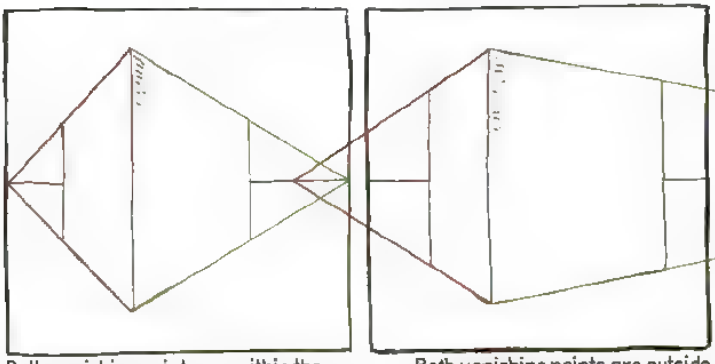
But this one has both vanish ng points outside the paper.

Let me put it this way.



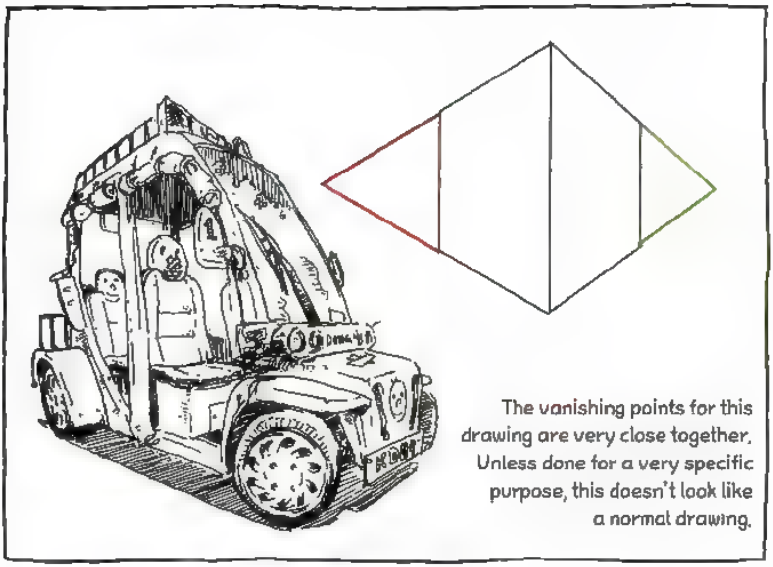
This is too much distortion

this is a reasonable amount of distortion

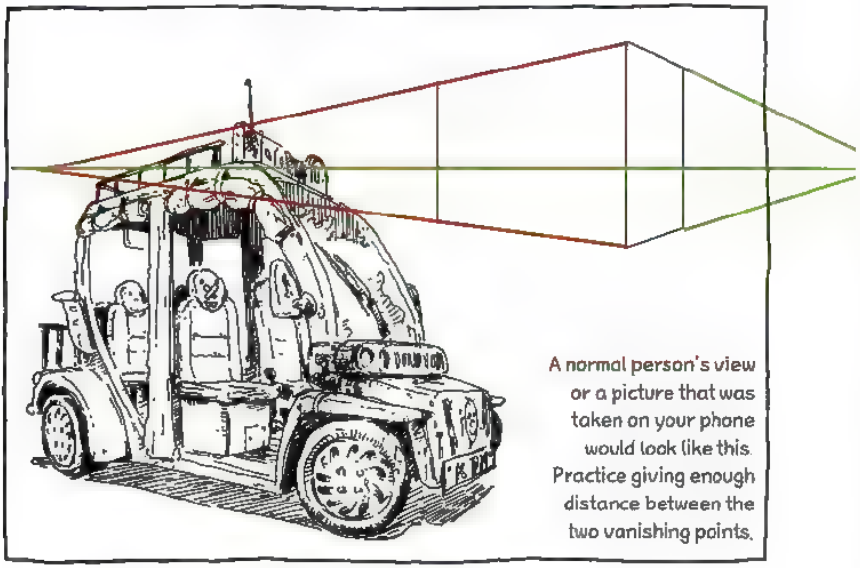


Both vanishing points are within the paper, and there's not enough distance between them. It doesn't look like a box because the distortion is too extreme. It's hard to fill up the space with this kind of box.

Both vanishing points are outside the paper, and there's not enough distance between them. When you're drawing an object from a normal person's view, place both vanishing points outside of the paper.

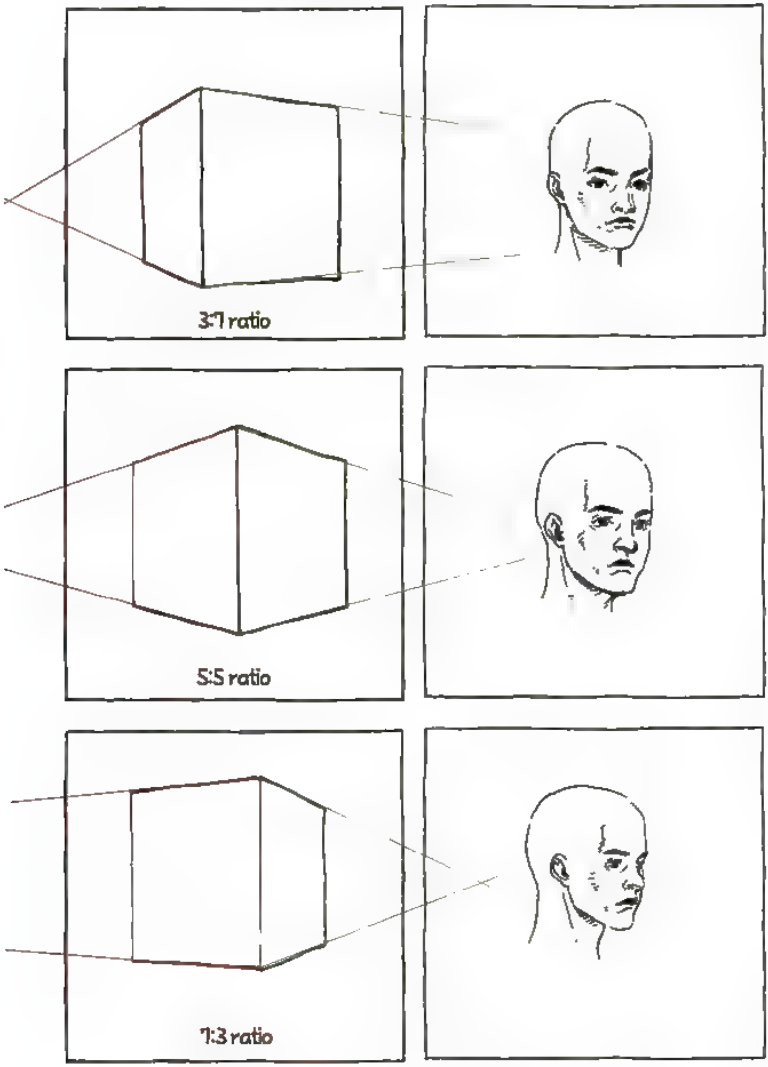


The vanishing points for this drawing are very close together. Unless done for a very specific purpose, this doesn't look like a normal drawing.

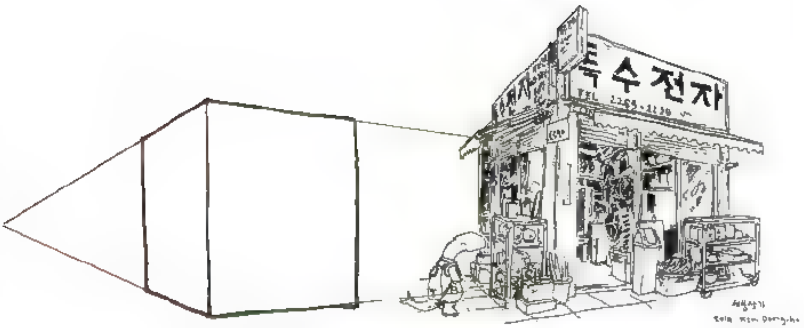


A normal person's view or a picture that was taken on your phone would look like this. Practice giving enough distance between the two vanishing points.

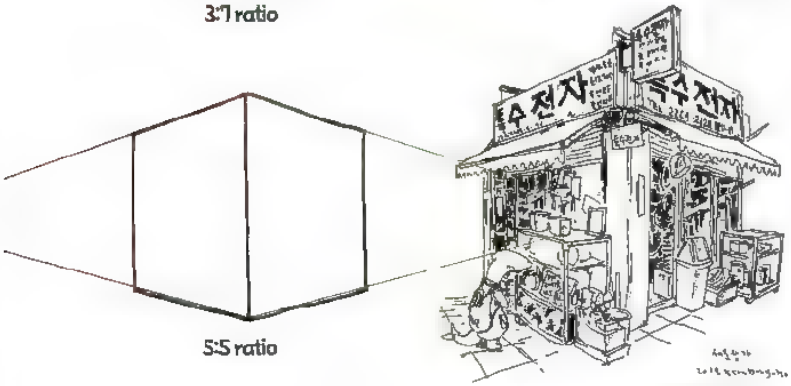
For the 2-point perspective, there is one part that you need to pay careful attention to. Unlike for a 1-point perspective, you need to decide what angle you want to draw from.



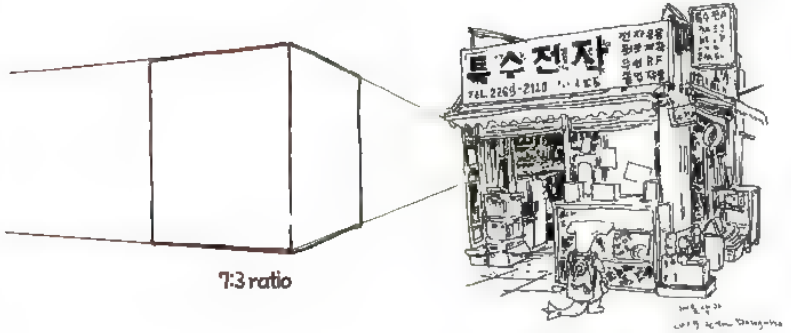
These are the three most common angles to draw from.



3:7 ratio

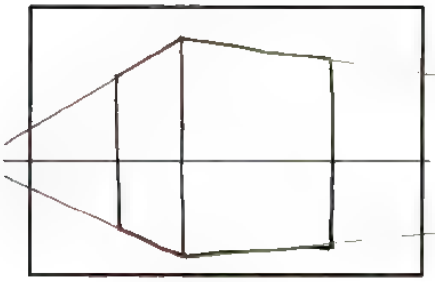


5:5 ratio



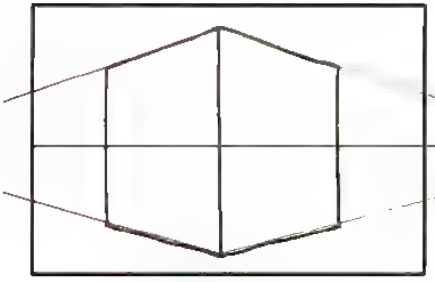
7:3 ratio

The 5:5 ratio drawing may look a little awkward and unstable compared to the other two angles.



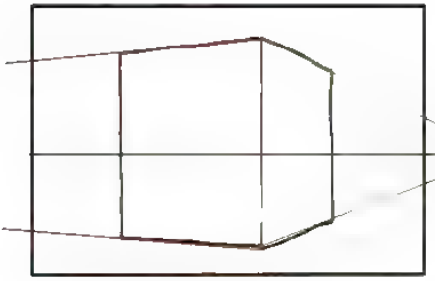
3:1 ratio

Another obvious piece of information that is helpful to keep in mind. If you look in this drawing, the vanishing point on the left side (small surface area) is closer, and the one on the right side (large surface area) is farther away.



5:5 ratio

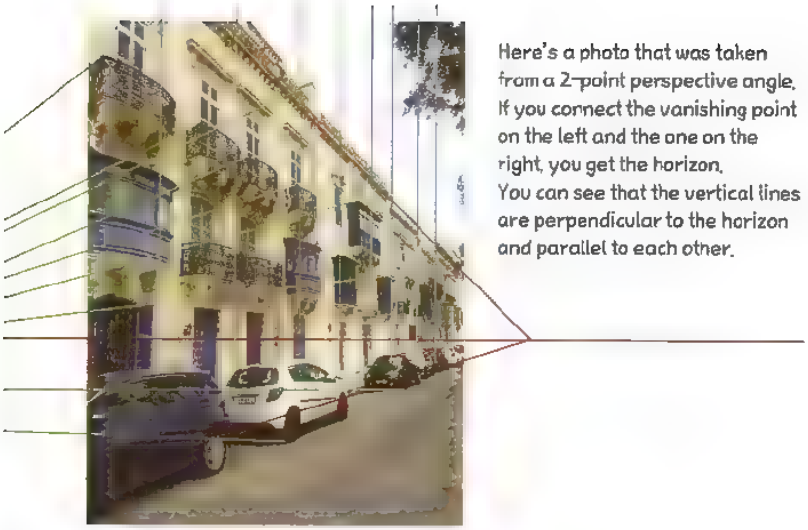
In this drawing, the vanishing points are equidistant from each other.



1:3 ratio

Lastly, in this drawing, the left vanishing point is farther away than the right one.

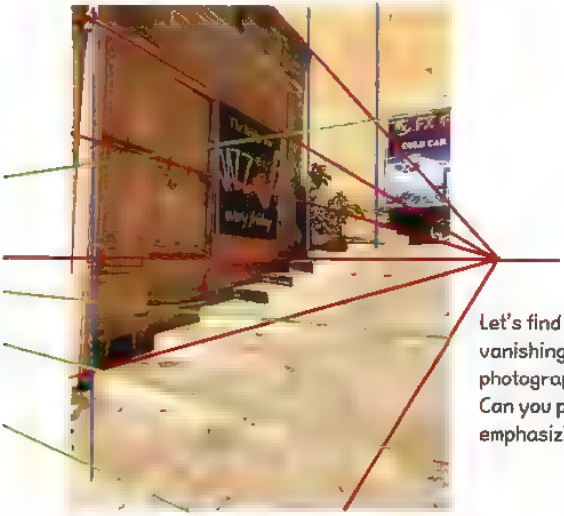
To sum up, to draw a box with a 2-point perspective you must:
-Place the vanishing point outside of the paper.
-Place one vanishing point closer to the object and the other farther away.



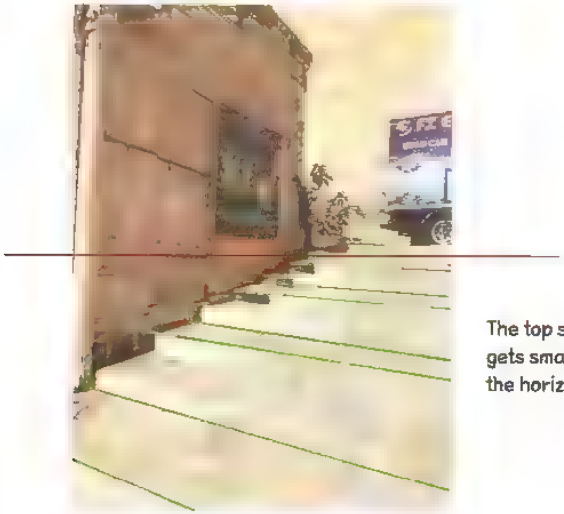
Here's a photo that was taken from a 2-point perspective angle. If you connect the vanishing point on the left and the one on the right, you get the horizon. You can see that the vertical lines are perpendicular to the horizon and parallel to each other.

There's another thing to note in this photograph. I'm sure you know it by now.

Take a look at the visible surface area of the windows. The farther back it is, the smaller it gets. This is something that I will continue to emphasize.

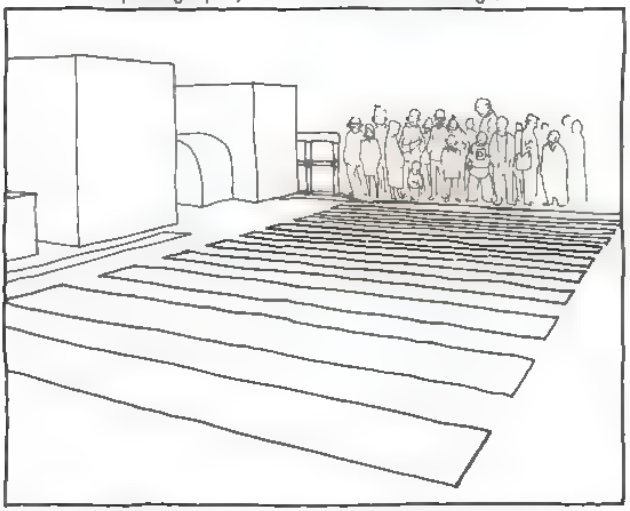


Let's find the horizon line and vanishing points in this photograph as well.
Can you point out what I've been emphasizing?

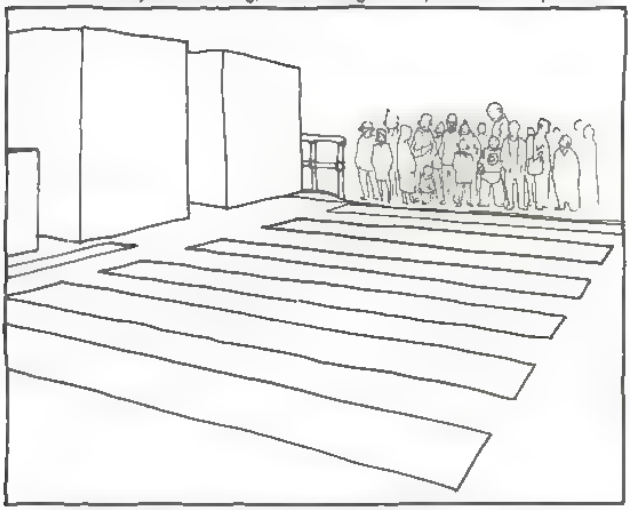


The top surface area of the stairs gets smaller as it moves closer to the horizon line.

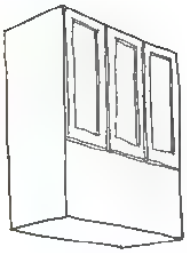
Since it might be a little boring and confusing to only look at photographs, let's come back to drawings.

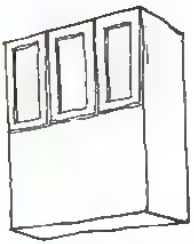


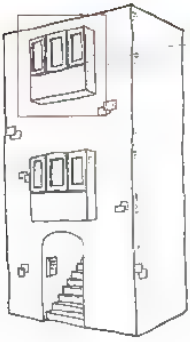
Because the surface areas of the crosswalk lines and the cars are noticeably decreasing, there is a good impression of space.



Although the vanishing points are in the right places, there's less impression of space. That's because there isn't much change in surface area.



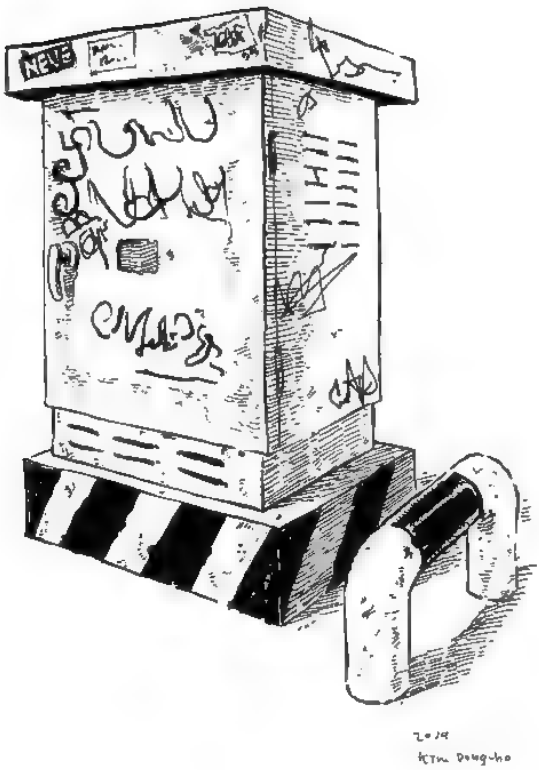




It's possible to make it look like a 2-point perspective!

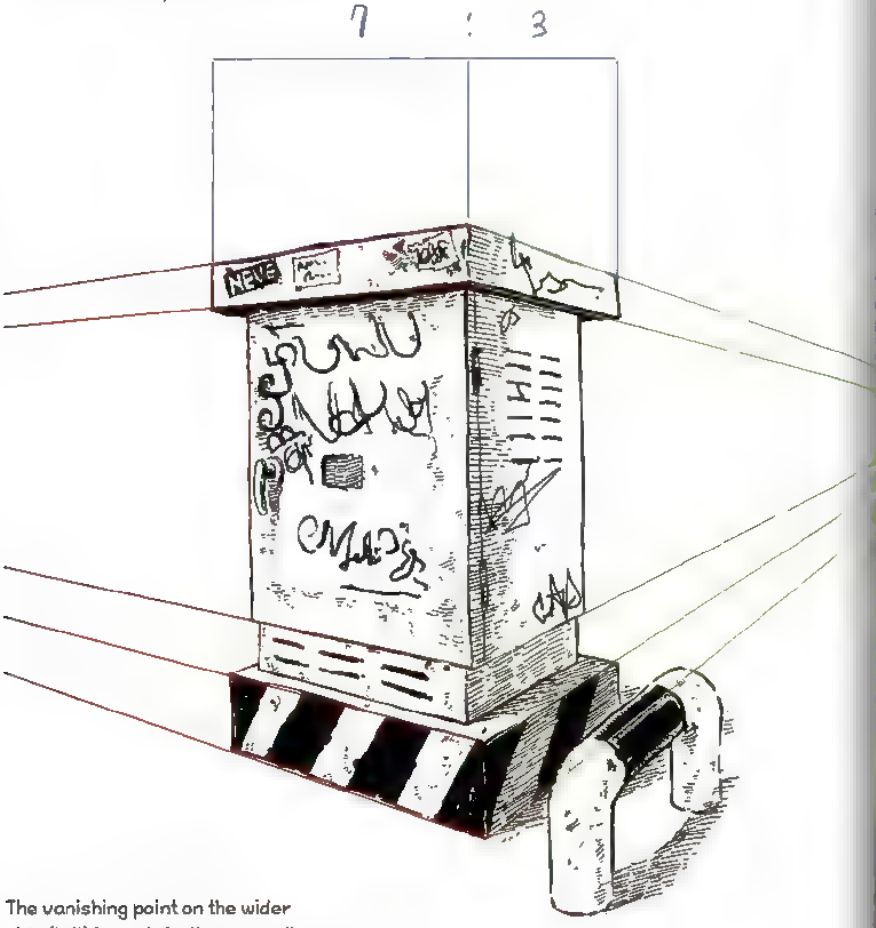
Technically speaking, this window is from an up angle, so you need to use a 3-point perspective.

But if you take a picture of the building from far away, it can look like a 2-point perspective. And if you imagine zooming in to just the window, you can apply the 2-point perspective to it.



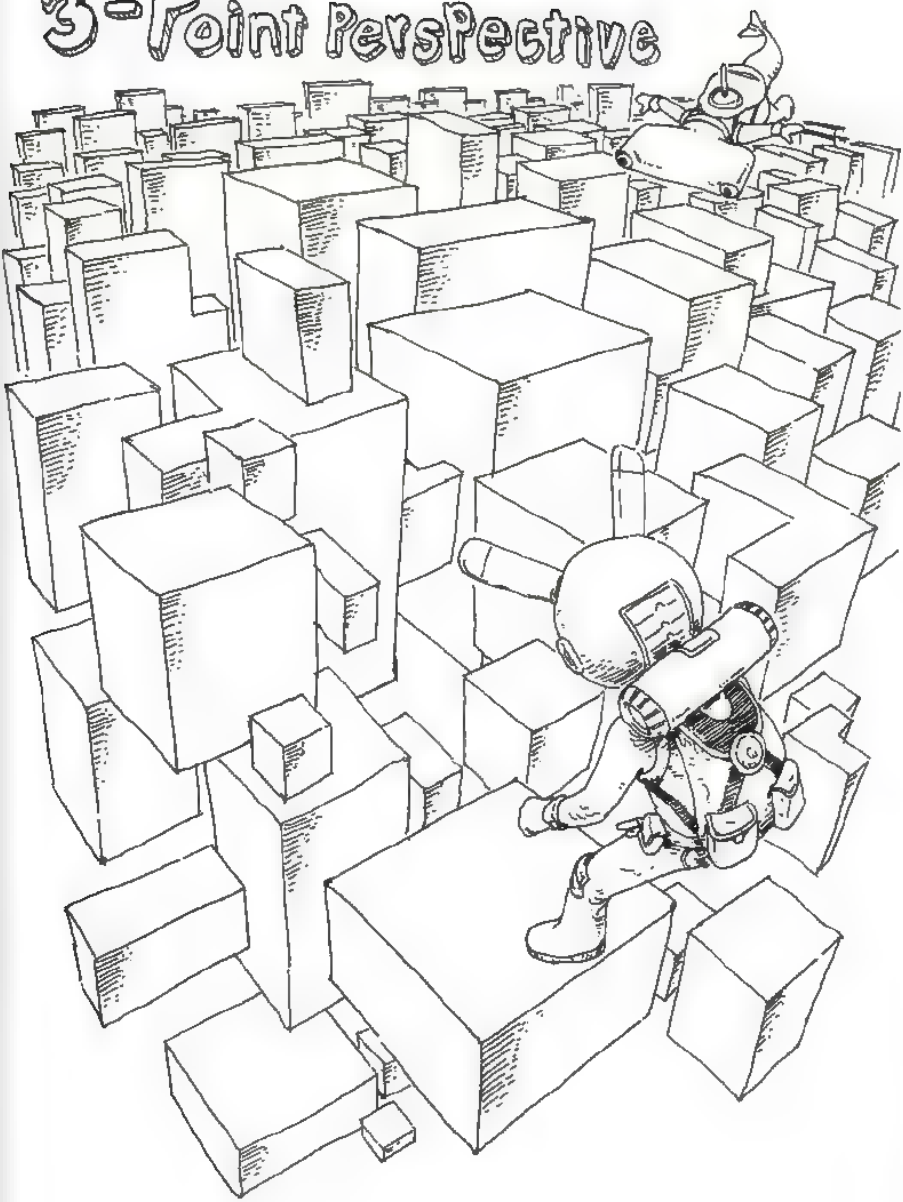
Unlike the drawing in the 1-point perspective section, I corrected the ground so that it's flat and level.

Although I'm emphasizing the 7:3 ratio,
you don't need to always follow that.
Feel free to experiment!



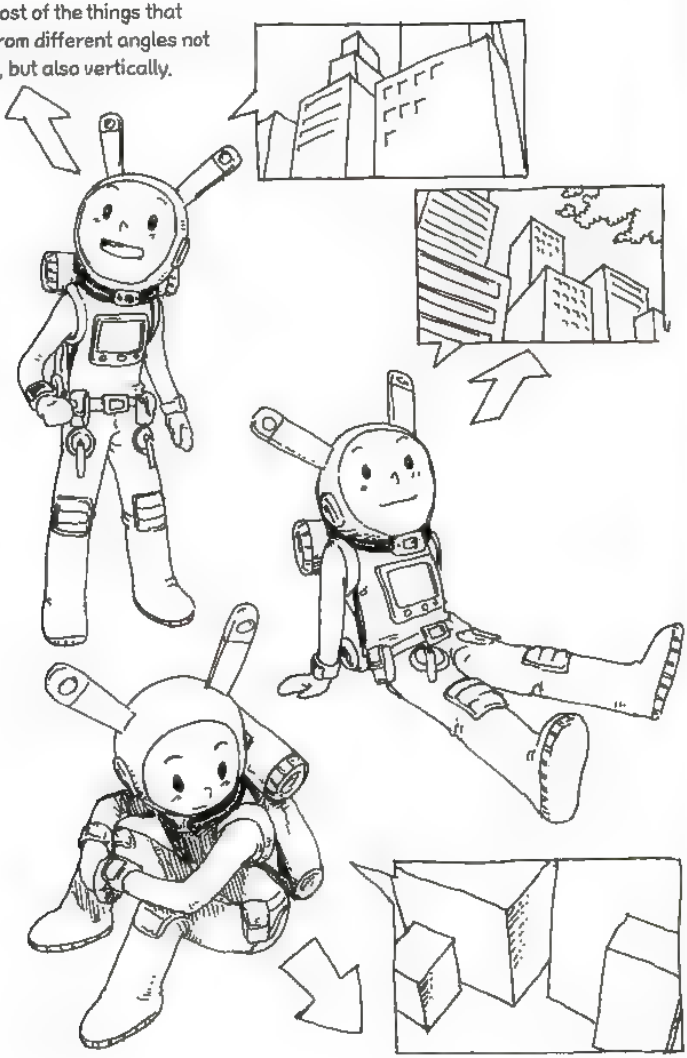
The vanishing point on the wider
side (left) is much farther away than
the vanishing point on the narrower side (right).
And both vanishing points are outside of the page.
This is essential for drawing natural looking
spaces and objects.

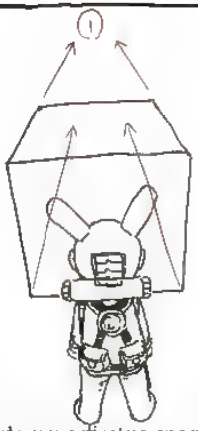
3-Point Perspective



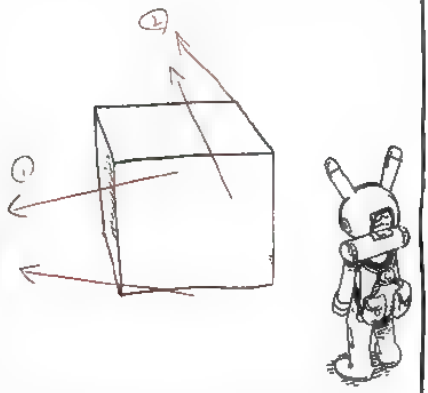
We look at spaces and objects from many different angles. And there is always some amount of distance between where we are and what we're looking at.

Simply put, most of the things that we see are from different angles not just laterally, but also vertically.

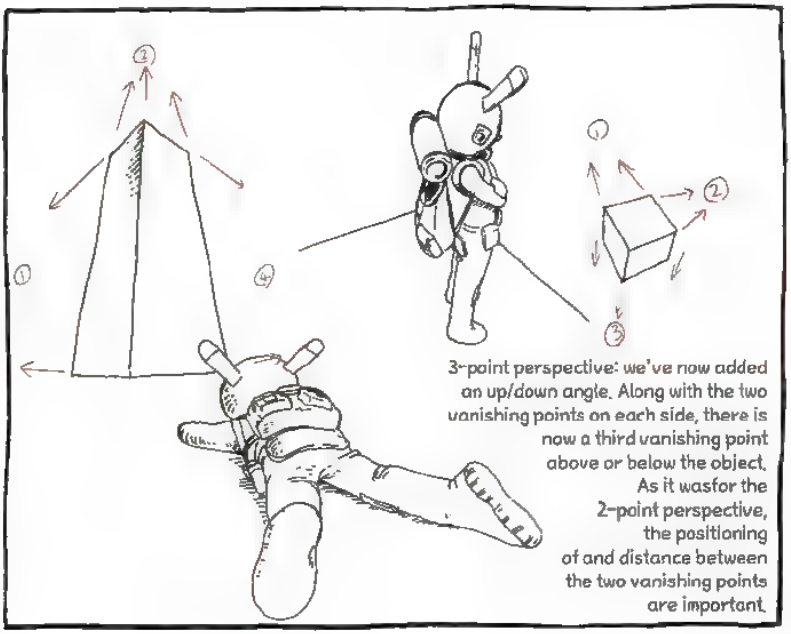




1-point perspective: perspective lines gather at one point. This is a good perspective for expressing objects that are straight-on.

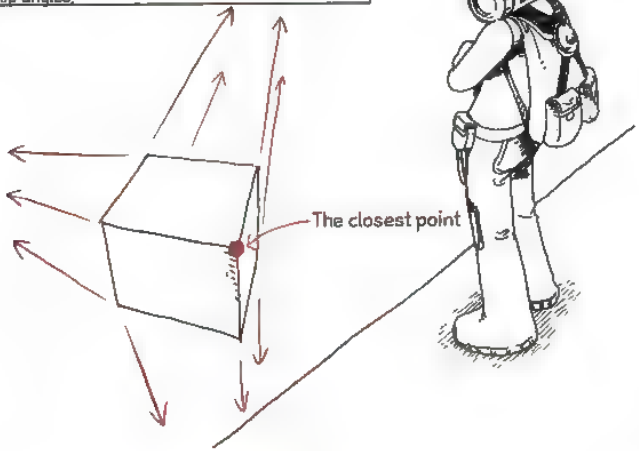


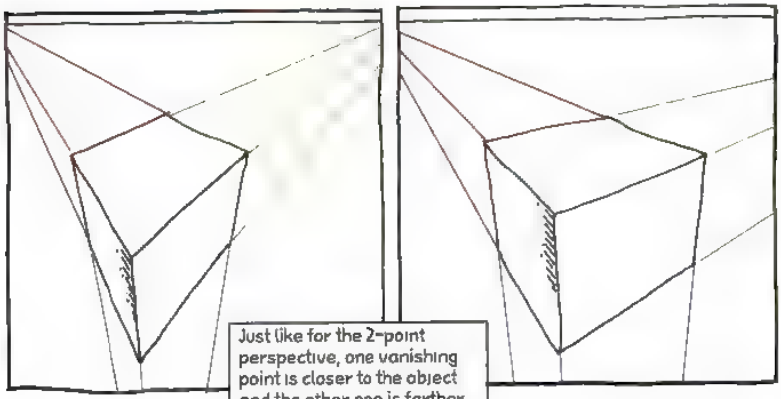
2-point perspective: perspective lines gather at two points. The positioning of and distance between the two vanishing points is important.



3-point perspective: we've now added an up/down angle. Along with the two vanishing points on each side, there is now a third vanishing point above or below the object. As it was for the 2-point perspective, the positioning of and distance between the two vanishing points are important.

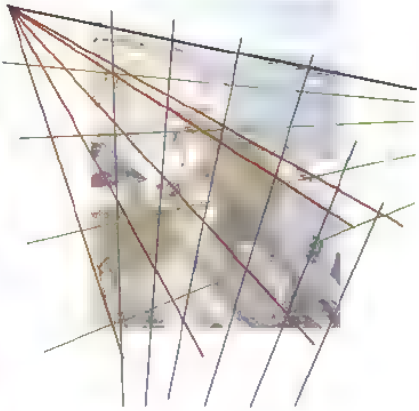
From a ¾-view, the corner of the box is the part that's the closest to you. And from there, three lines move away from you. If you follow these lines, you'll eventually find three vanishing points.
Two vanishing points like the ones we had in the 2-point perspective, and another one underneath the box because we're looking down. The vanishing points on the left and right can be found on the horizon, but the location of the bottom one depends on how extreme the down angle is. The same goes for up angles.

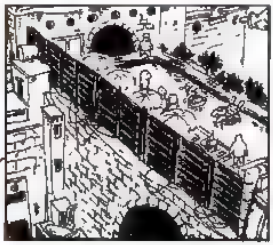




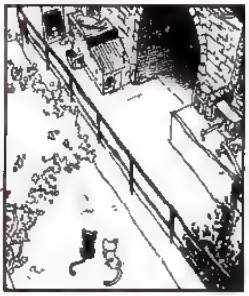
Just like for the 2-point perspective, one vanishing point is closer to the object and the other one is farther away.

The horizon line in this photograph is tilted because the camera was tilted. Pay close attention to the perpendicular lines.



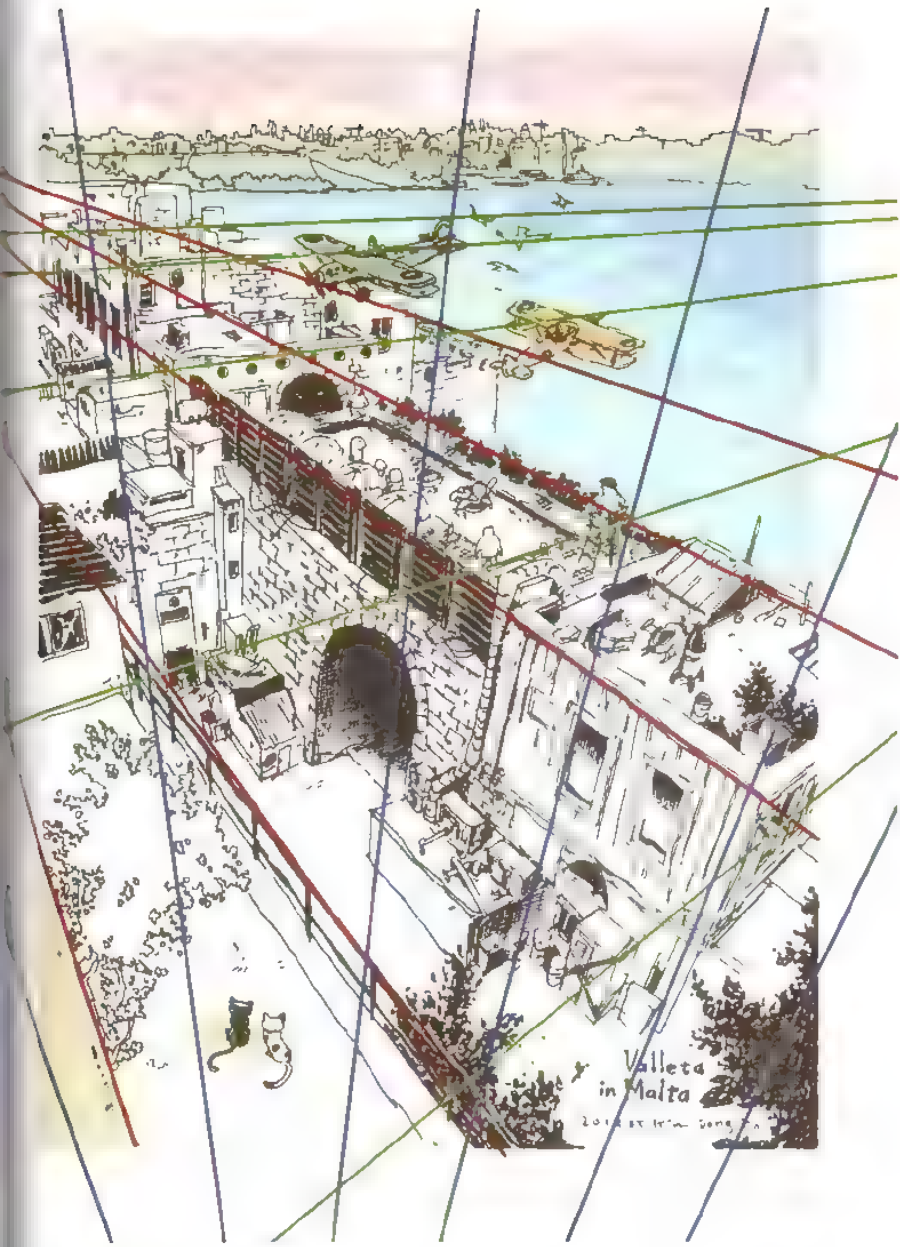


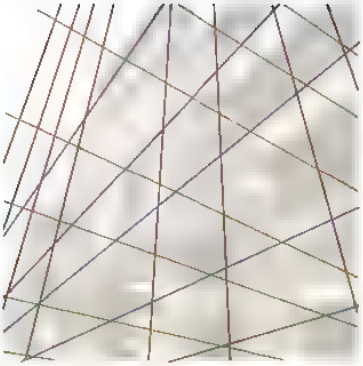
As always, I'm going to emphasize that the walls get narrower as they move farther back (as they get closer to the vanishing point, horizon line)



The same with this handrail, too. Using consecutive windows or buildings to express distance is a good technique.

Valleta
in Malta
2019 05 Trin Dong-ho


Valleta
in Malta

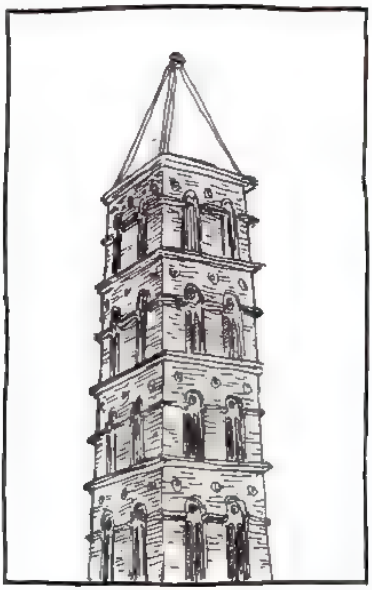


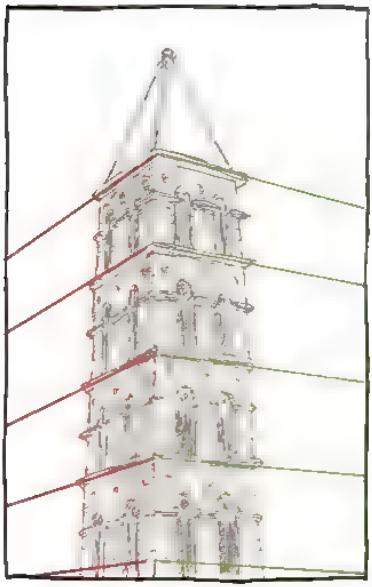
First, check how far out the vanishing points on the left and right are from the paper.

This is a good reference photo. You see the shrinking in both the balconies protruding from the building and the three windows in the middle.

You'll see this when you try drawing it for yourself, but this perspective is trickier because you have to shrink vertically as well.

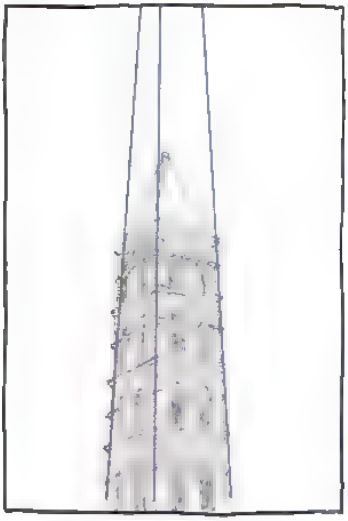
Let's take a look at a different reference photograph since I don't want you to think that shrinking is all there is to perspective. Think about where I'm standing as I'm looking at this tower.



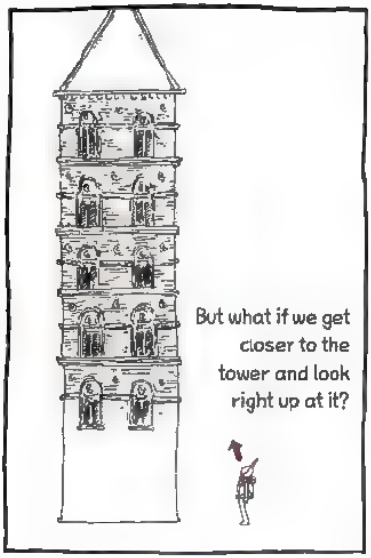


In this case, the vanishing points should be much farther away than what we've been looking at so far. But of course, it'll look more natural to vary the distance between the tower and each vanishing point.

And this time, the windows shouldn't shrink too dramatically.

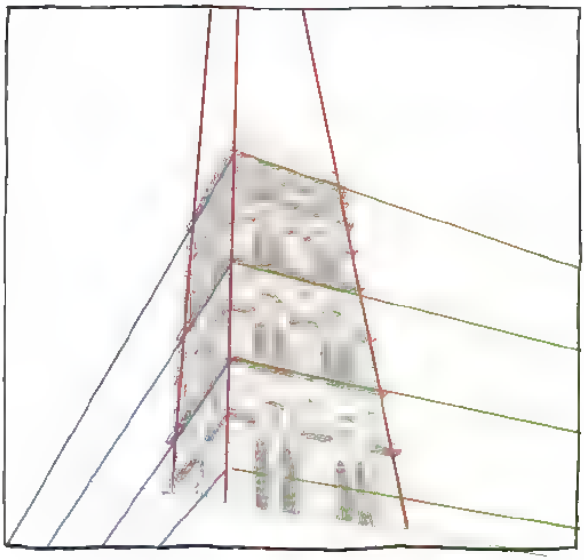


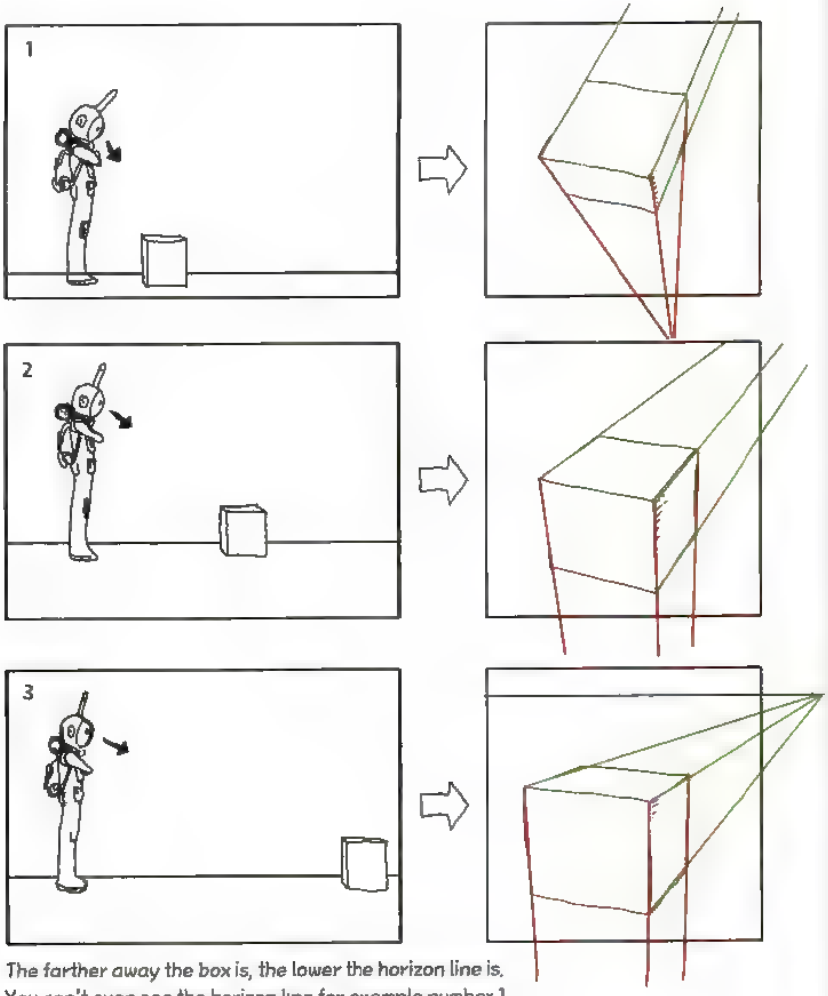
And the top vanishing point is positioned far away too. Because this is a view from far away, the shrinking in the windows and overall shape is not as dramatic. In conclusion, faraway objects don't experience as much deformation caused by perspective.



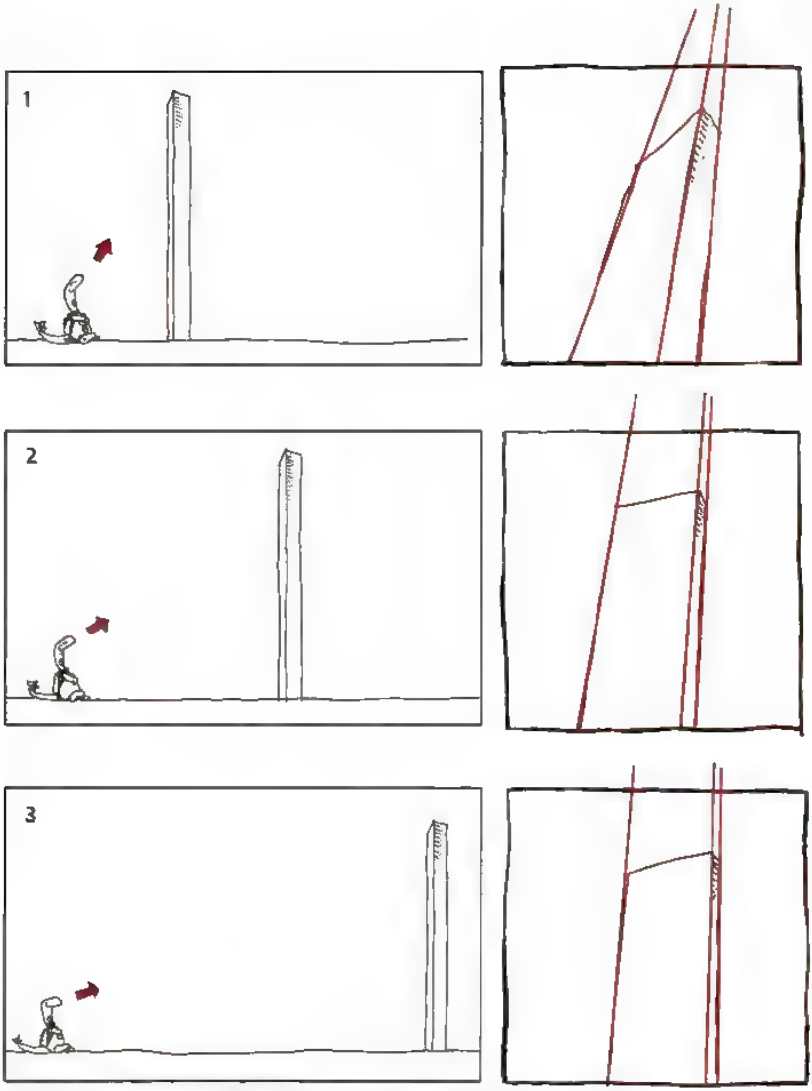
In this case, the windows shrink dramatically, and the top vanishing points are much closer to the paper.

I'm going to place the left vanishing point close to left side.



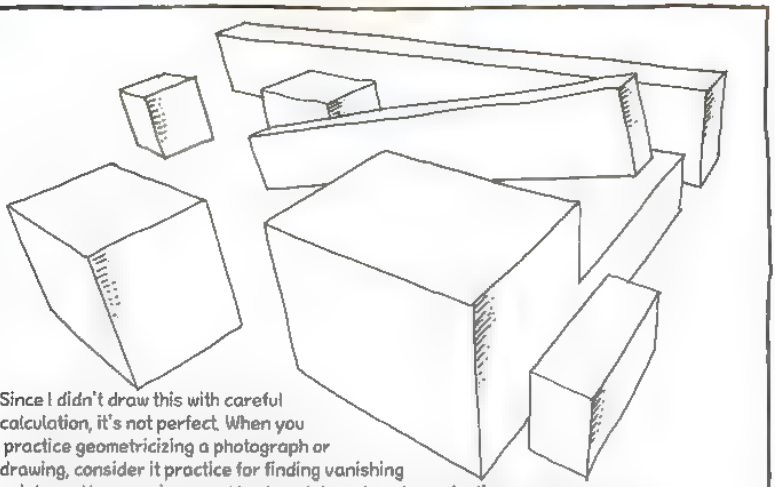


The farther away the box is, the lower the horizon line is.
You can't even see the horizon line for example number 1 because it's so high up, but in number 3 the horizon line is within the page. Also, the farther away the box is, the farther the vertical vanishing point is. It's visible in example number 1 but not in number 3.
In conclusion, the farther back the box is, the more two-dimensional it looks.



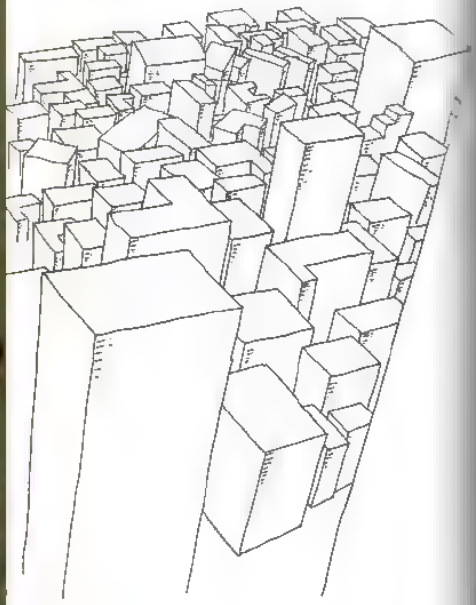
The farther away the building is, the more obtuse the perspective line's angle becomes, and the higher the horizon's position is.

At the same time, the vanishing point where the vertical line gathers moves farther away. Regardless of whether it's an up or down angle, the farther you get, the more two-dimensional it starts to appear.

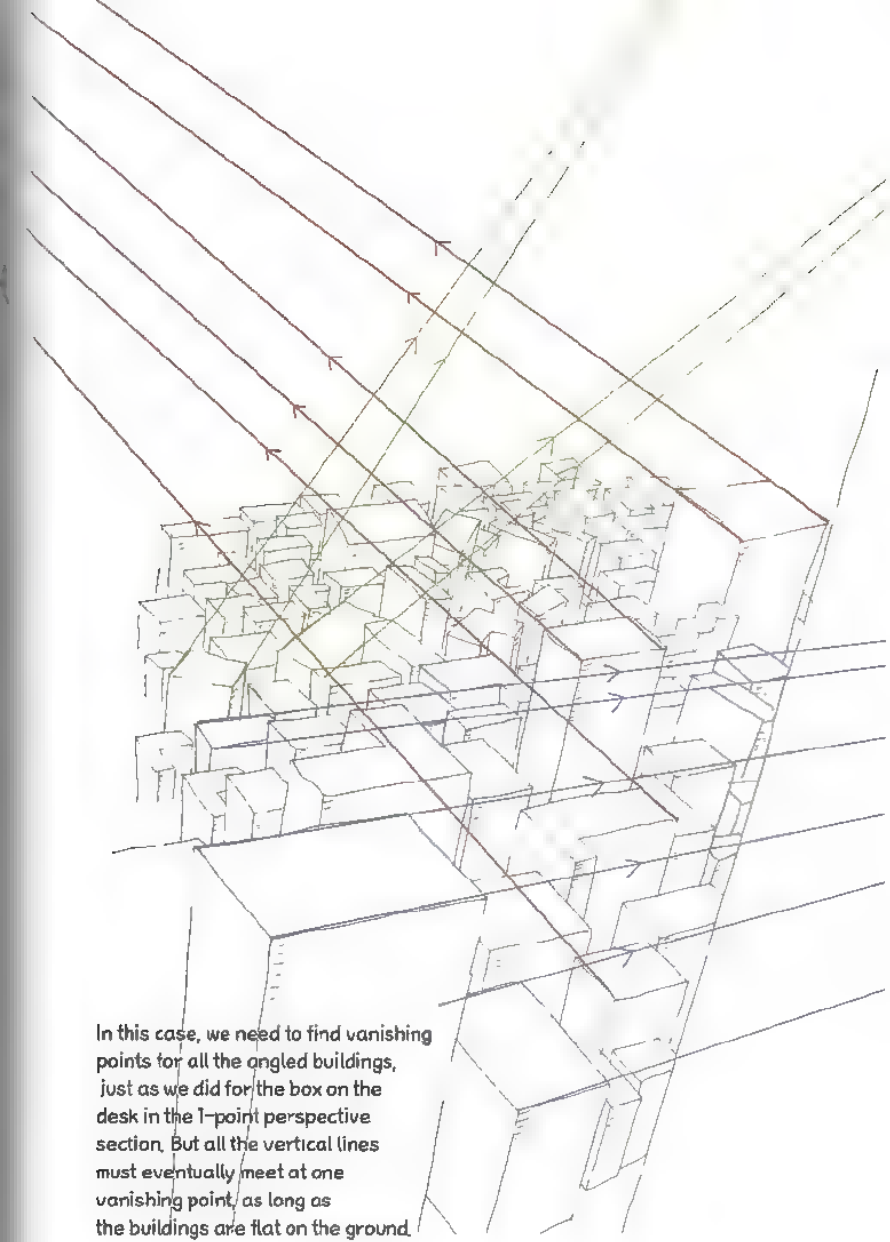


Since I didn't draw this with careful calculation, it's not perfect. When you practice geometricizing a photograph or drawing, consider it practice for finding vanishing points and horizon lines, and try to get it as close to perfection as you can. More than anything, it's important that you set the vertical vanishing point at the right location. Remember that the location of the vanishing point changes based on where the vantage point is.

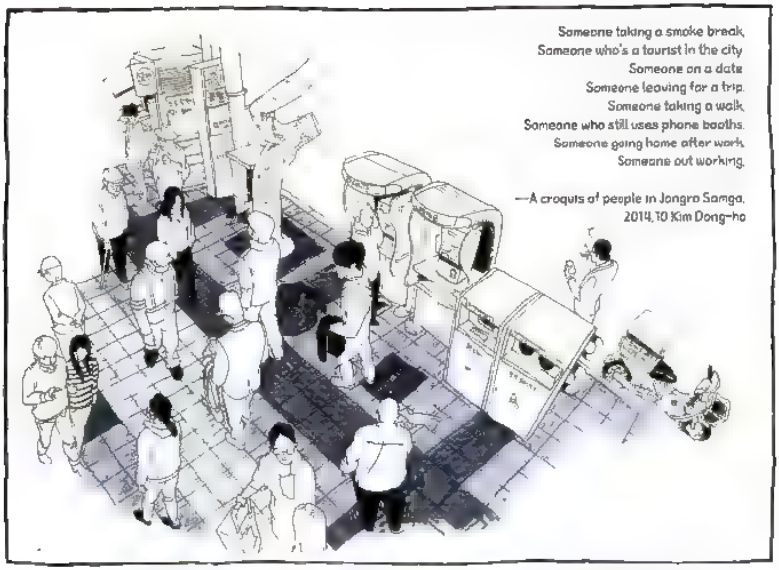
~ Draw it yourself!

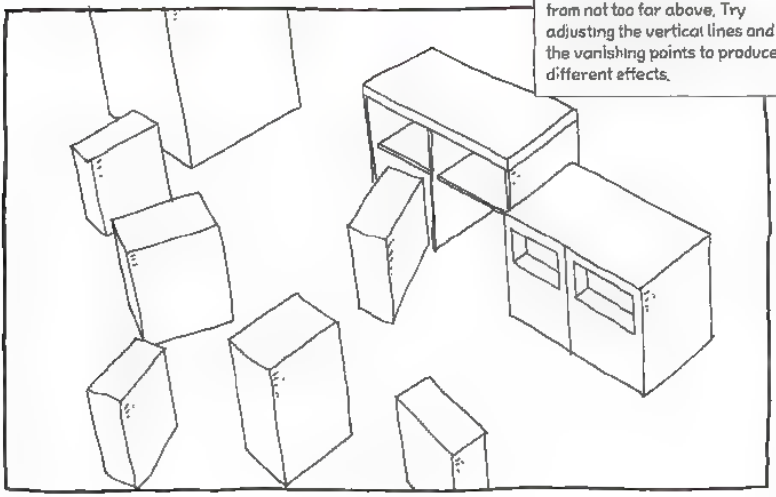


This is a view of the Kyobo intersection in Gangnam from a 20-story building. You see the hill in the background and all the other buildings that are at all sorts of different angles? How should we go about this?

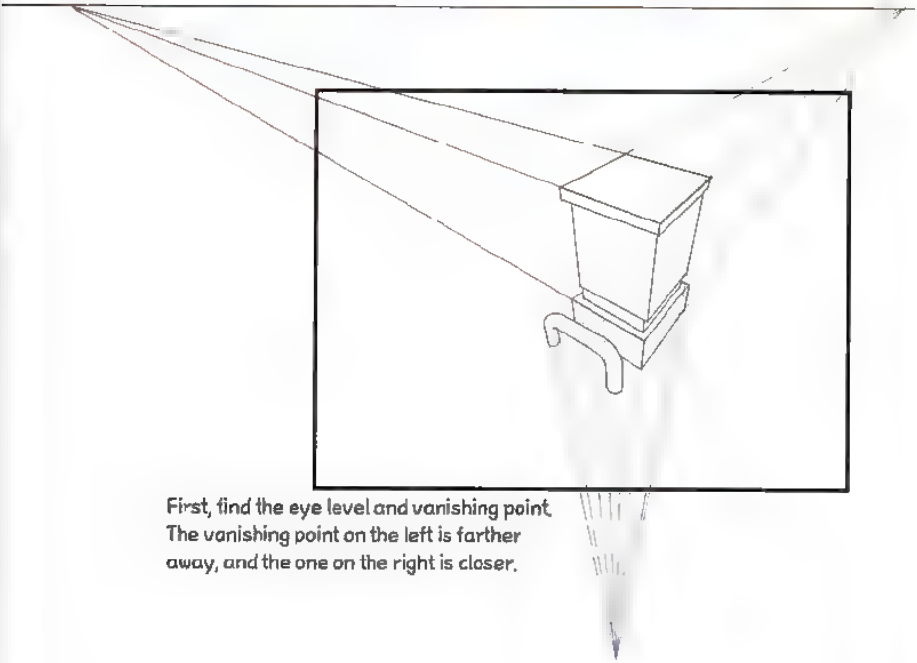


In this case, we need to find vanishing points for all the angled buildings, just as we did for the box on the desk in the 1-point perspective section. But all the vertical lines must eventually meet at one vanishing point, as long as the buildings are flat on the ground.

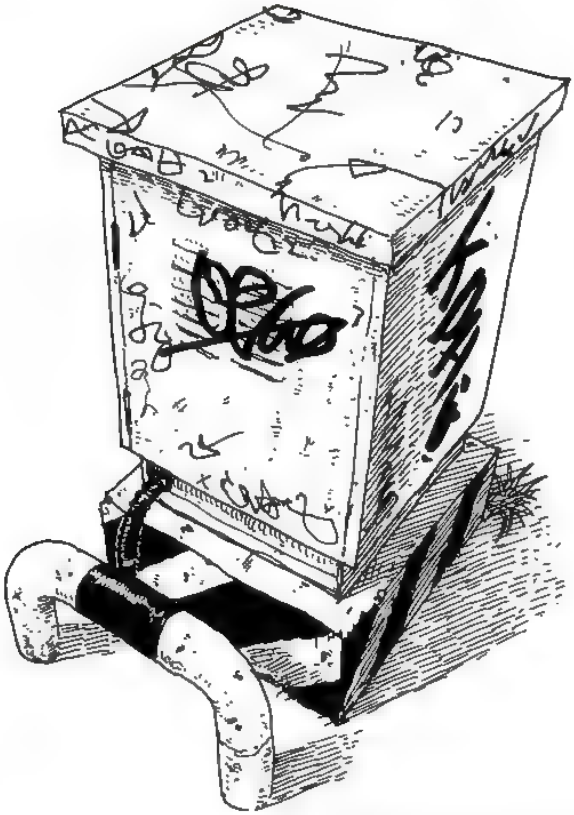

Someone taking a smoke break,
Someone who's a tourist in the city
Someone on a date
Someone leaving for a trip,
Someone taking a walk,
Someone who still uses phone booths,
Someone going home after work,
Someone out working.
—A croquis of people in Jongro Samga, 2014, 10 Kim Dong-ho


This is a 3-point perspective from not too far above. Try adjusting the vertical lines and the vanishing points to produce different effects.

Let's draw this electric wire box using a 3-point perspective.



First, find the eye level and vanishing point. The vanishing point on the left is farther away, and the one on the right is closer.

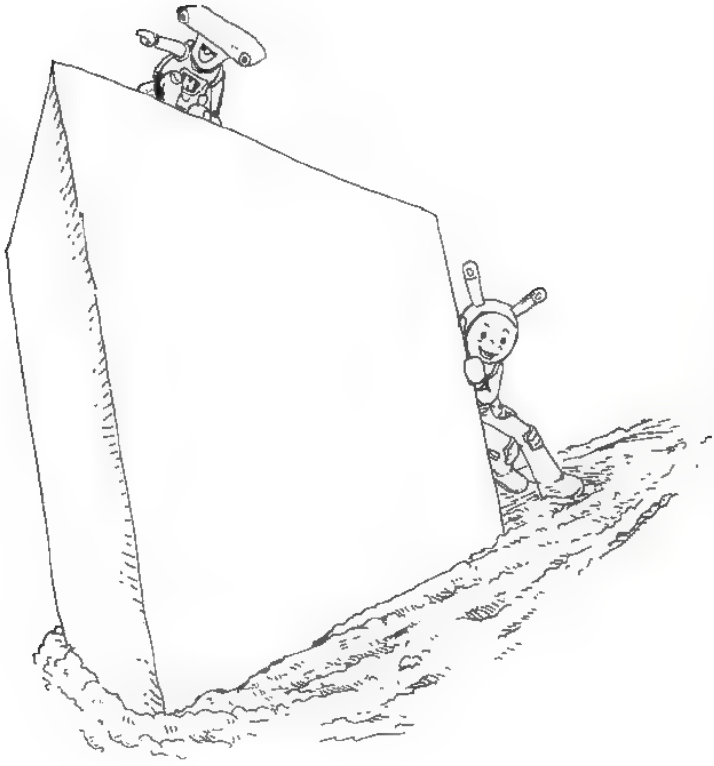


It's good practice to take pictures of everyday items around you and draw them.

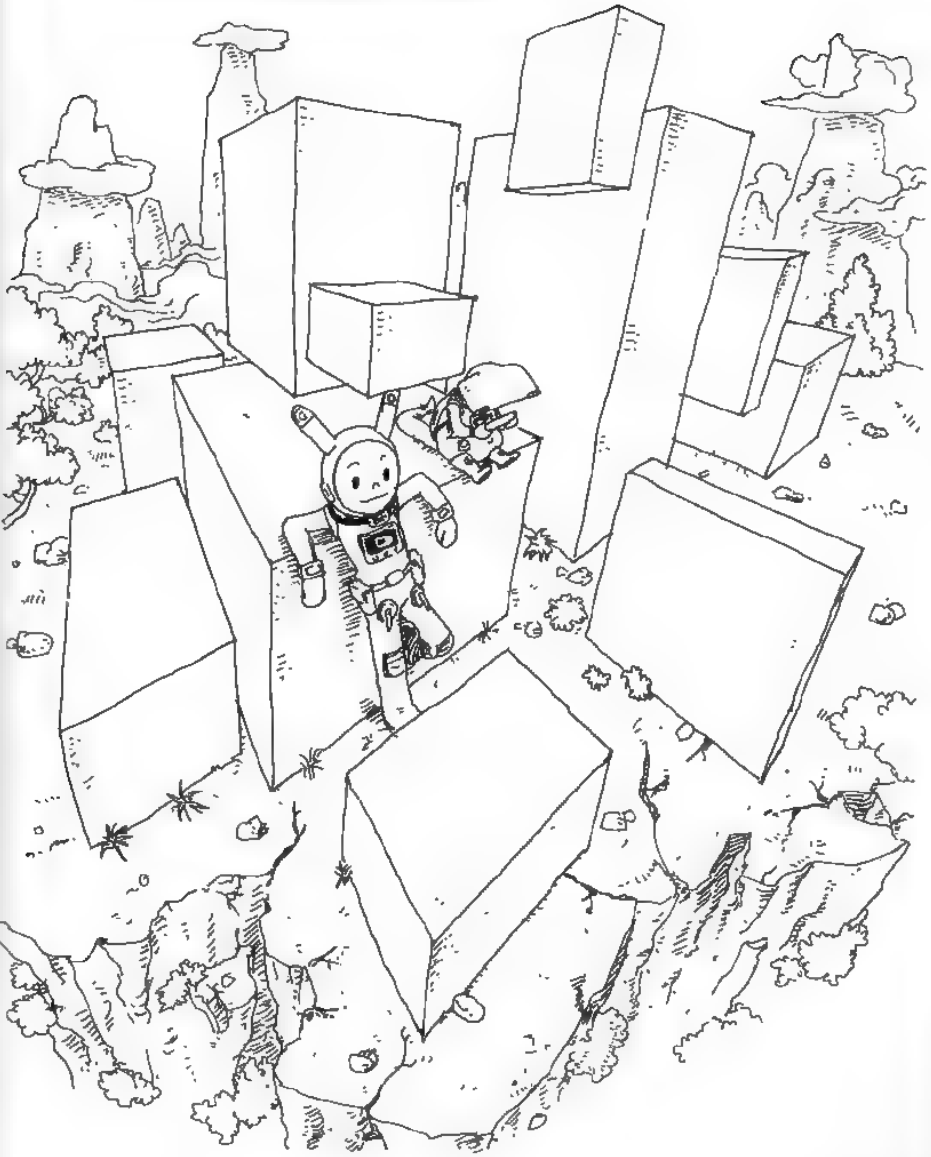
~ Draw it yourself!

PART 04

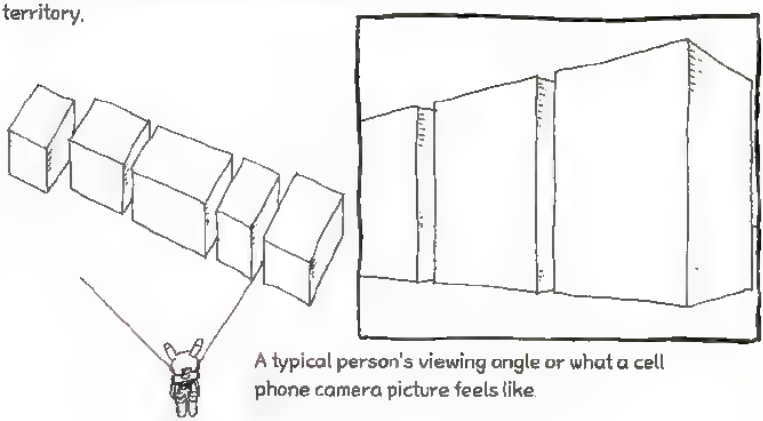
LENS-SPECIFIC METHODS OF PRODUCTION



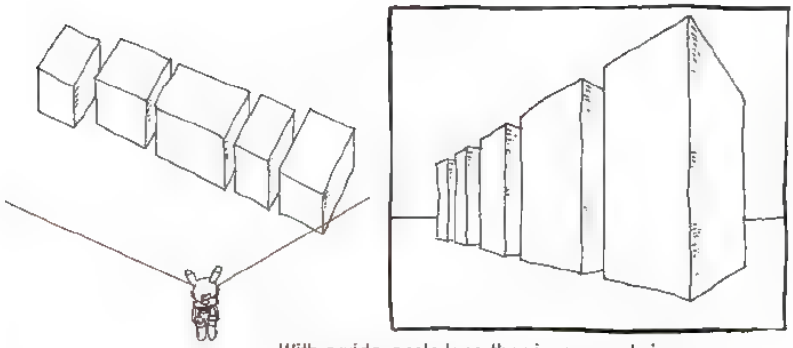
Wide-Angle Lens



So far, we've been looking at the changes that occur when we vary the point of view. Now it's time to understand and apply various angles according to each point of view. Even when you're looking at the same thing, you can vary the wideness of your angle to produce different effects.
I guess you could say that we're about to step into camera lens territory.



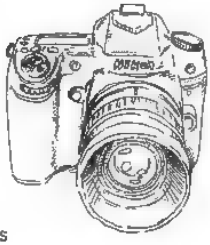
A typical person's viewing angle or what a cell phone camera picture feels like.

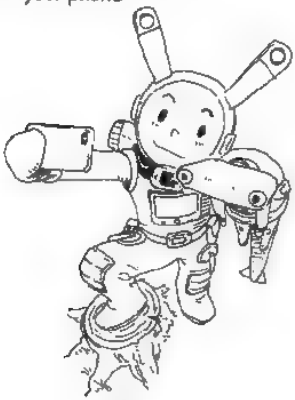


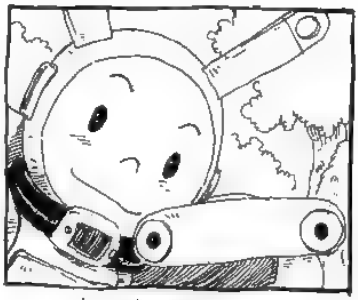
With a wide-angle lens, the viewing angle increases dramatically and you get more of the background in the picture.

A clip-on wide-angle lens for your phone

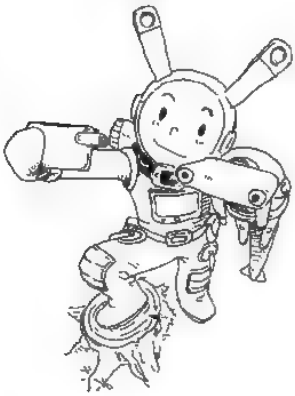
A camera with a wide-angle lens

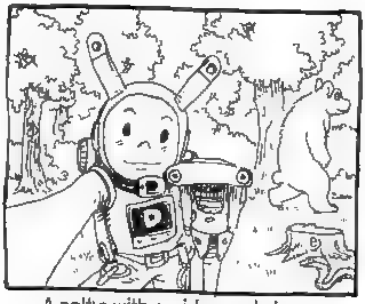




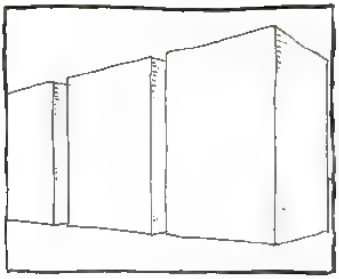


A regular selfie.

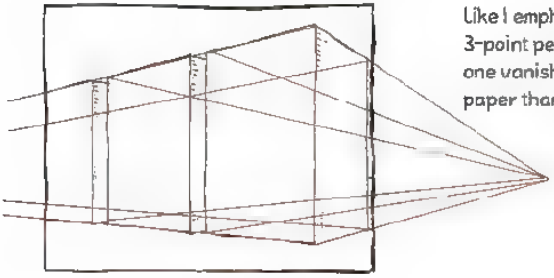




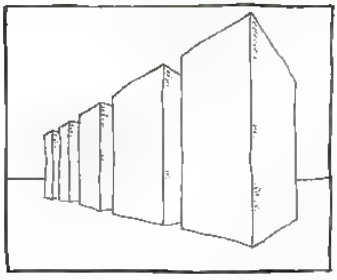
A selfie with a wide-angle lens (that's why they call it the selfie lens).



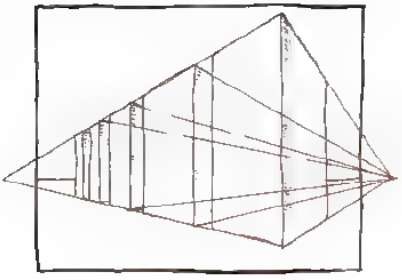
Let's find the vanishing point and horizon line in this drawing.



Like I emphasized in the 2- and 3-point perspective sections, one vanishing point is closer to the paper than the other one.

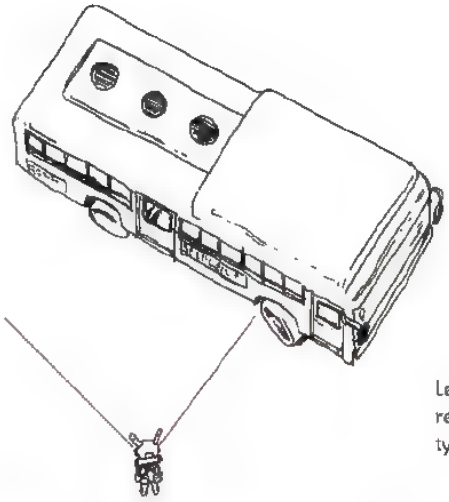


Let's try this one.

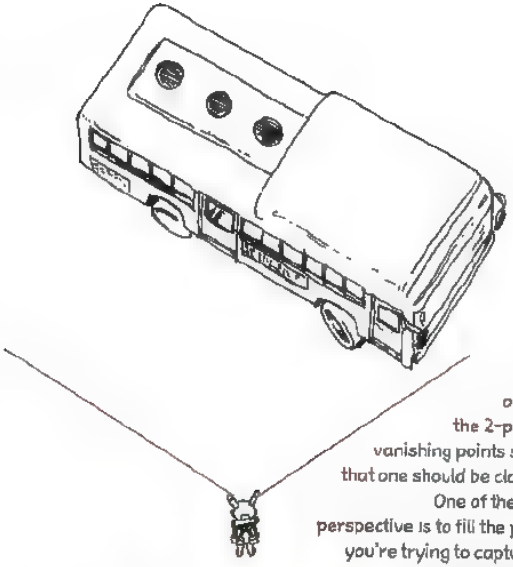


The distance between the two vanishing points is much shorter. One is actually within the page now.

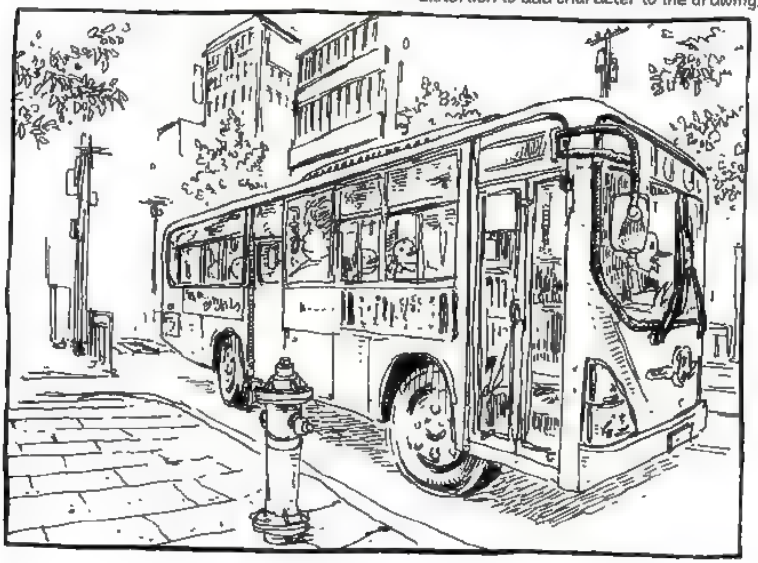
Draw it yourself!

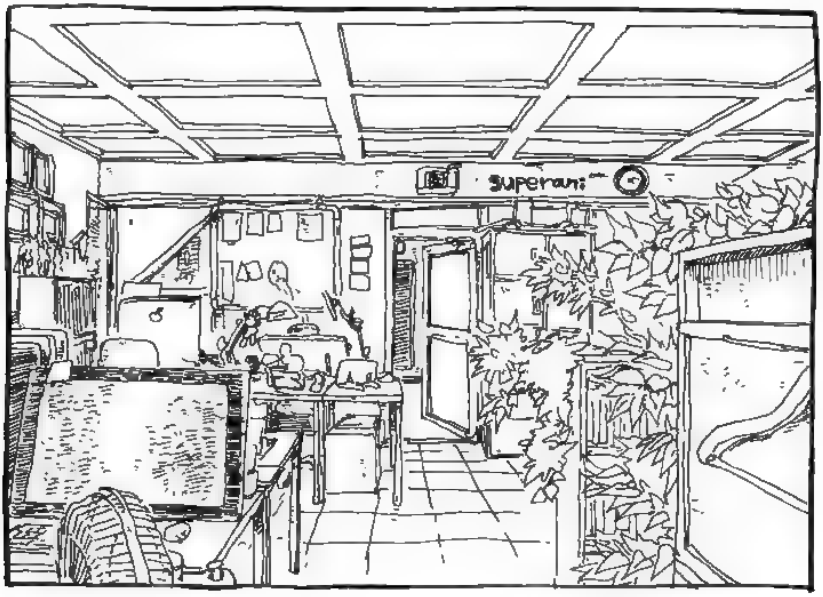


Let's apply that to a real-life space. This is a typical viewing angle.



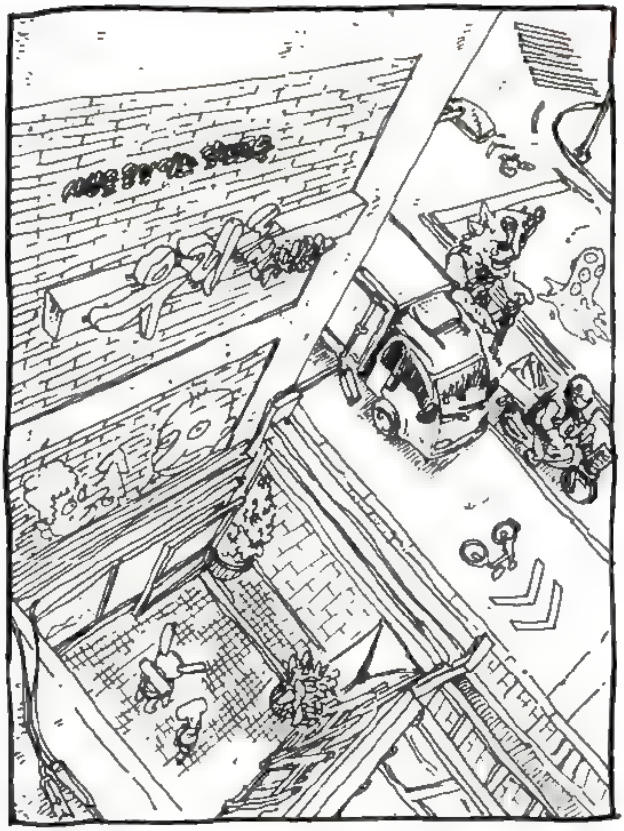
This drawing is distorted because it's trying to express what's outside of the normal viewing angle. In this drawing, the front top corner of the bus appears to be jutting out quite a bit. That's why I said in the 2-point perspective section that the vanishing points should be outside the paper, and that one should be closer and the other farther away. One of the reasons for using a wide-angle perspective is to fill the page with more of the space that you're trying to capture and to intentionally allow for distortion to add character to the drawing.



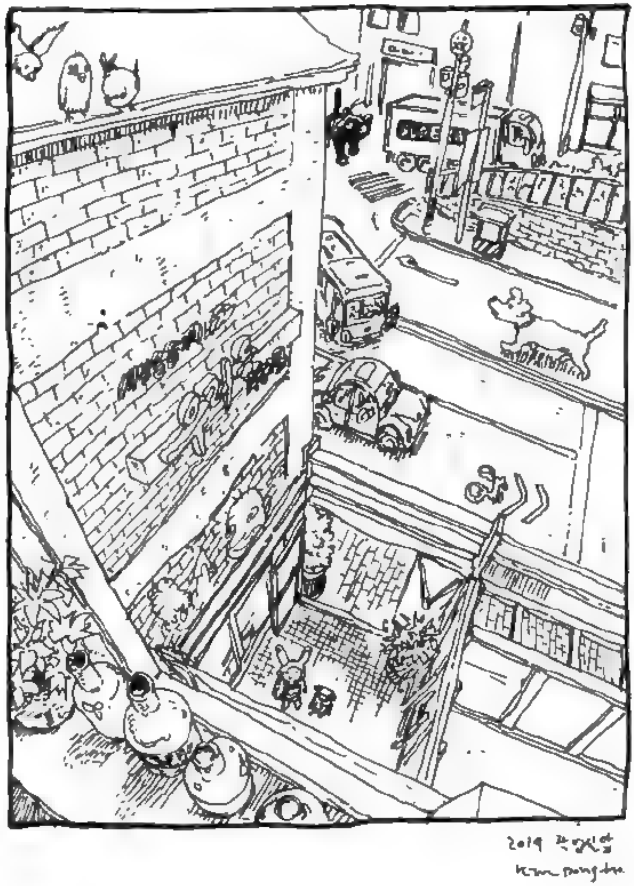


Here's a drawing from a typical viewing angle. Nothing special, right?

You might not think so until you have the two versions side by side, but the original viewing angle might seem too limited in comparison to the wide-angle perspective. This is useful when you want to explain a certain situation or express as much information as possible in one scene.

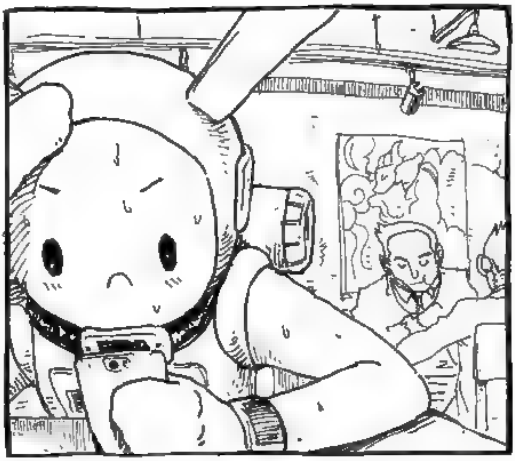


Here's a view from a 4th floor window.



Likewise, you can have a much fuller effect with a wide-angle perspective

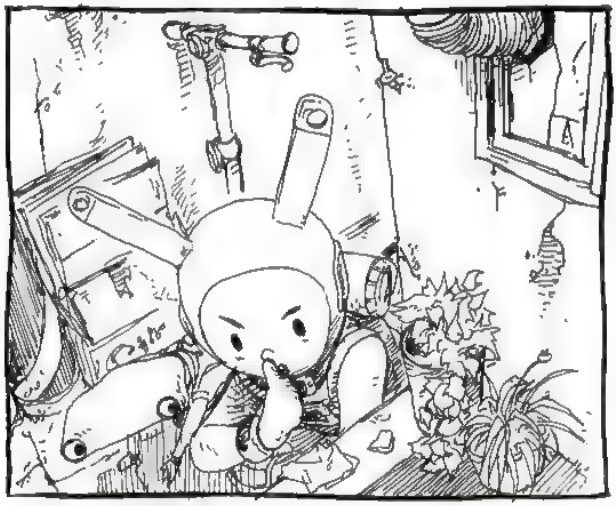
But everything must be used in the right circumstances.
For example, I might want to focus on the character in a cartoon.



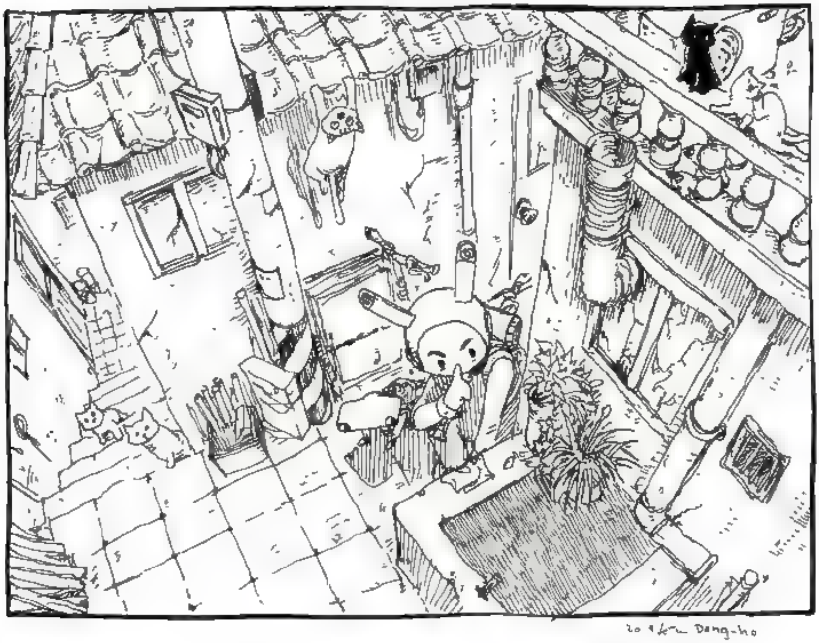
I want to really focus on the character's facial expression and lines to express the mounting tension...

So there's no need for me to try too hard to express the background space at the expense of the author's intention (of course, I'm not saying that a wide-angle perspective always breaks the tension).

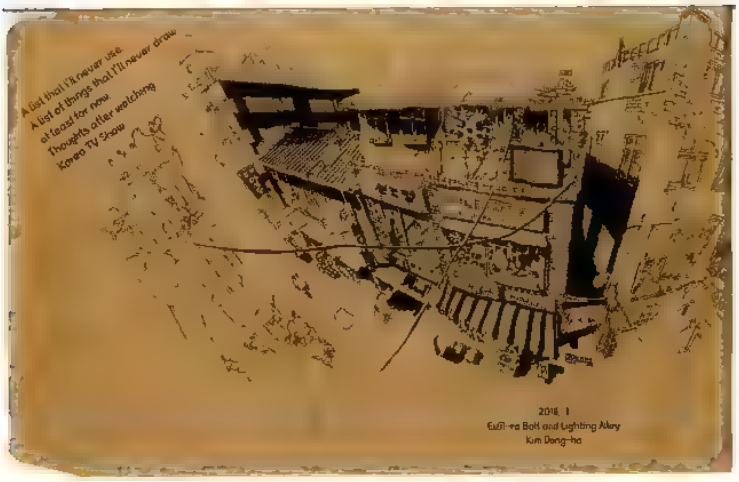
Here I am again, stealing a peek.
I think I want to emphasize the
character's facial expression and
the overall tension.

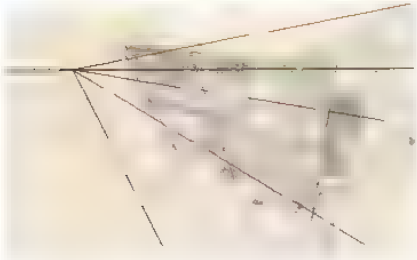


I don't need to lose the audience's attention to the background details.

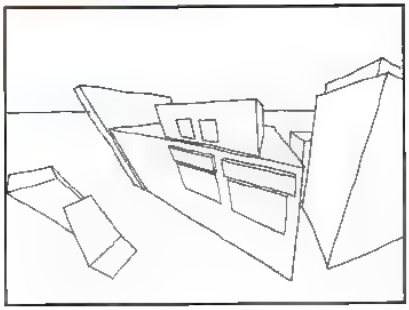


But in moments where wide-angle perspectives are needed, such as for scenes that are meant to give information about the situation or show the construction of the space that the character is in, feel free to go all out.

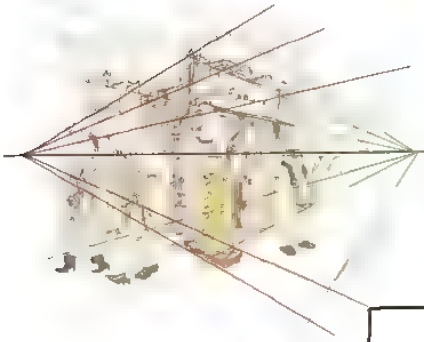




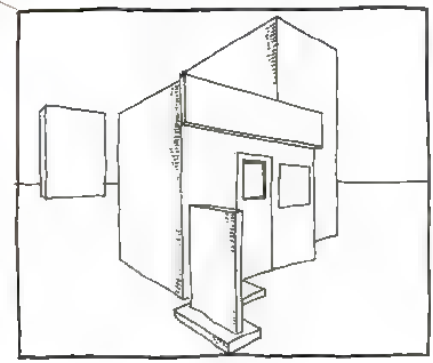
This looks a little awkward, right? But you can still tell where the horizon line and vanishing points are. The horizon line, which you get by connecting the two vanishing points on the left and right, must always be level. I exaggerated this in this drawing. Because the distance between the vanishing points is so short, I had to make the building on the right tilt towards the right side to keep it stable. This is an example of how a drawing can change based on the distance between the vanishing points.

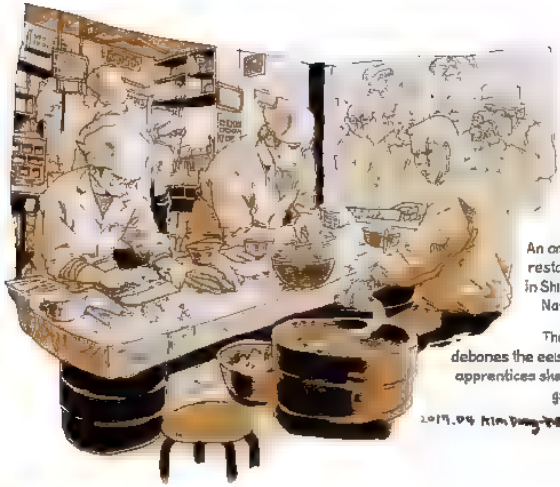


A little alleyway right outside of exit one of the Yeongdeungpo-gu Office Station. What a great location. I'll have to come back.



I used the wide-angle effect on a 2-point perspective. The horizon line is level, as always. And note how the distance between the vanishing points is much shorter.

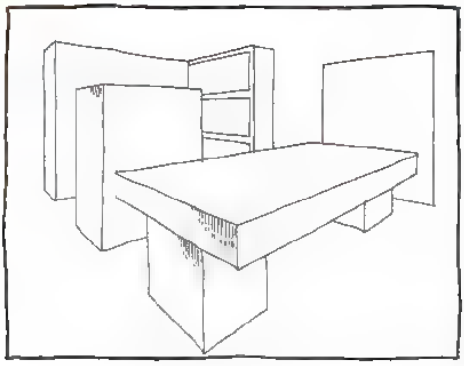


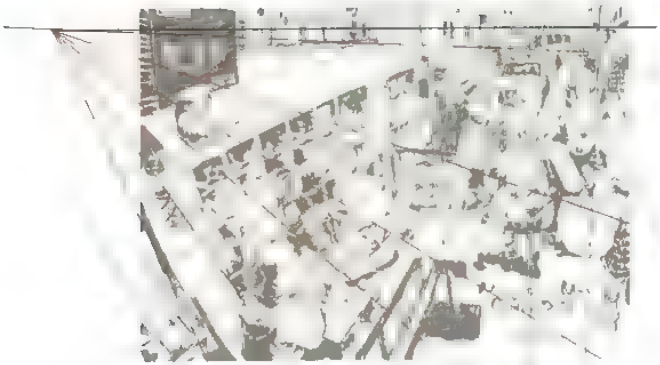


An amazing restaurant in Shinshoji, Narita.

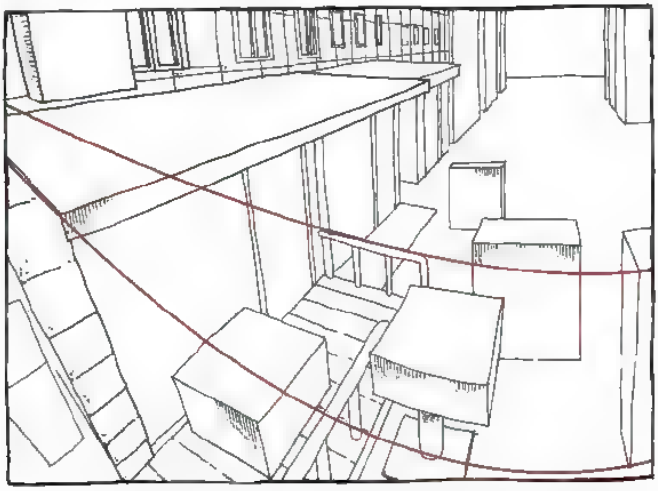
The master debones the eels and his apprentices skewer and grill them.

This is another example of the wide-angle effect on a 2-point perspective.

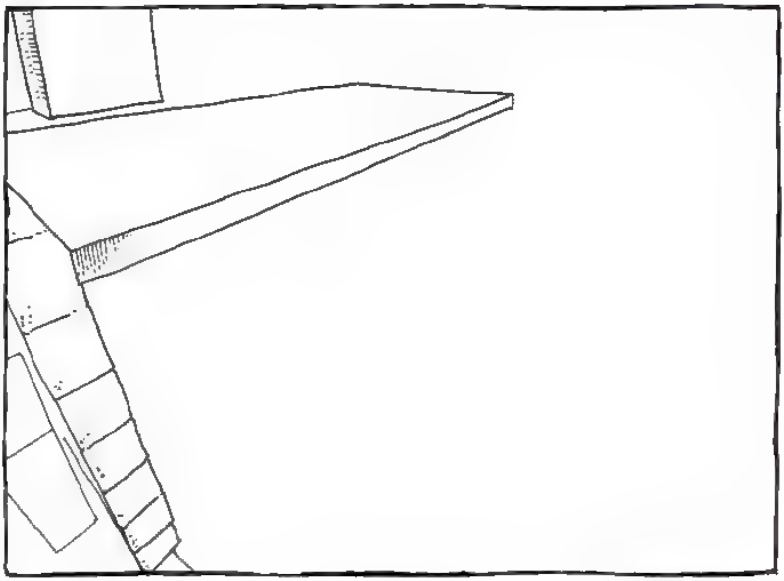




Here's a down angle, 3-point perspective drawing that has a wide-ang.e effect.

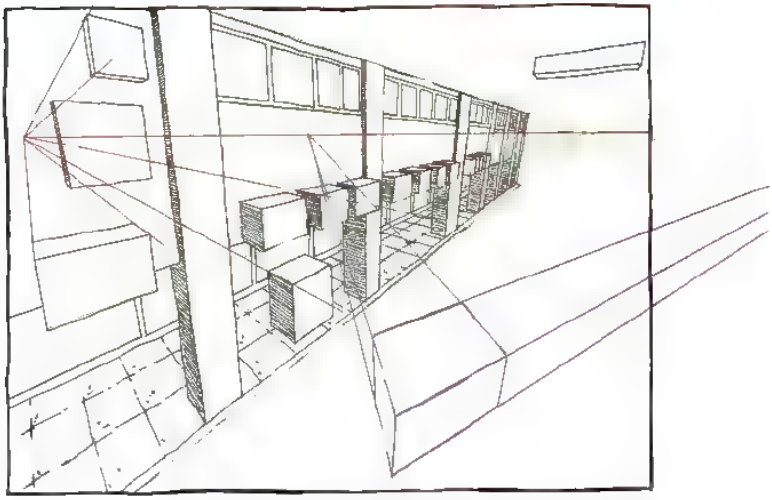


One tip is to have the leftward perspective line curve a little when it approaches the right vanishing point.

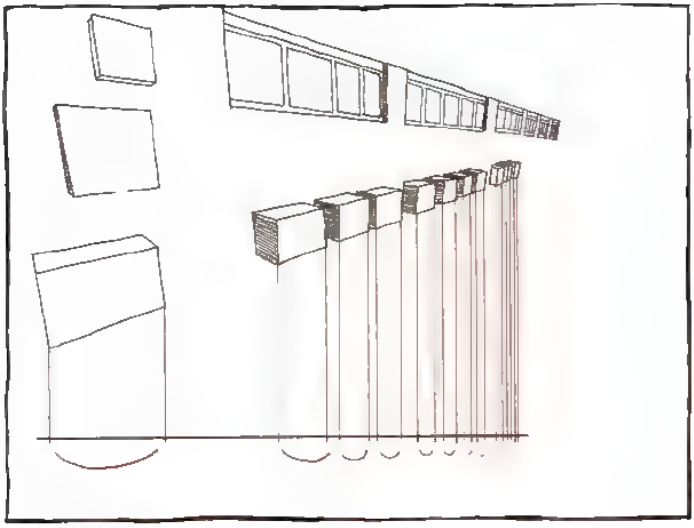


Try it for yourself.

didn't realize that I'd been feeling cooped up until I came outside to sketch for the first time in a long time.
Euljiro 4-ga Cheonggyecheon Stream



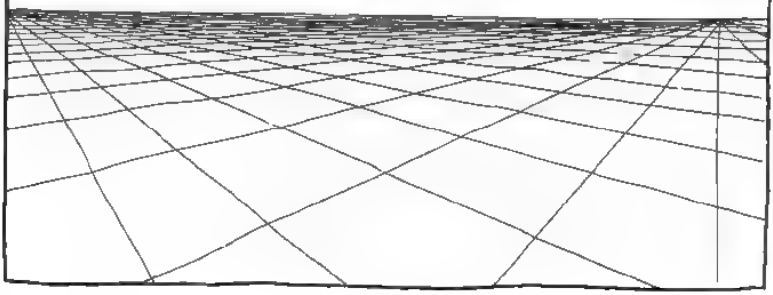
Although the forklift isn t parallel to the other objects, its vanishing points must still meet at the horizon line because it's parked flat on the ground.

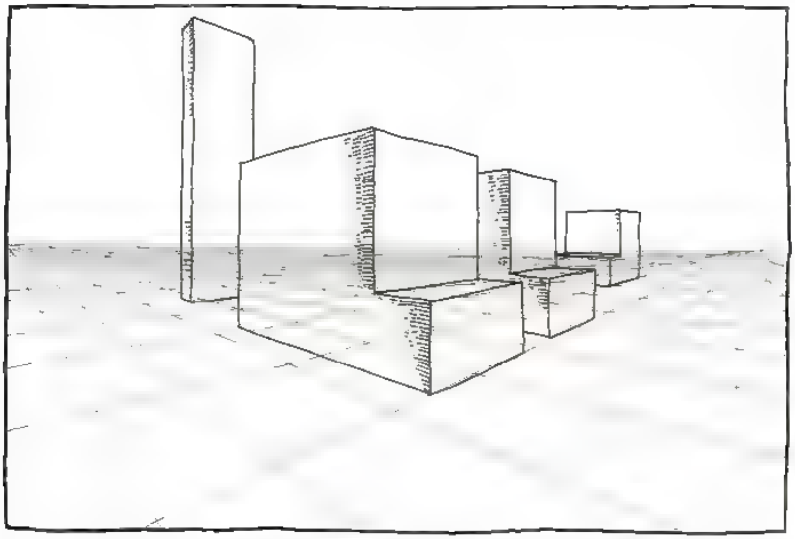


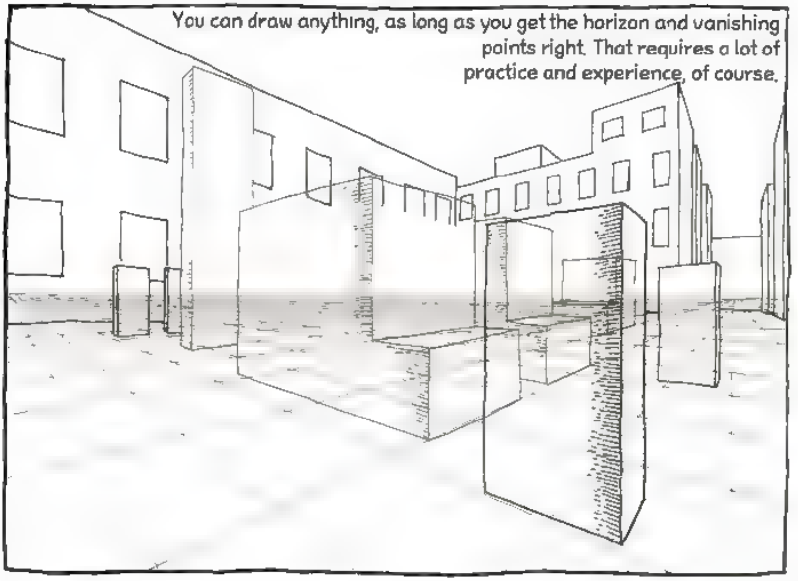
Note how the surface area of the windows and outdoor a/c units is shrinking. This is the part that you want to pay attention to.

Aligning all the vertical lines to the vanishing point is very important, especially with wide-angle perspectives.

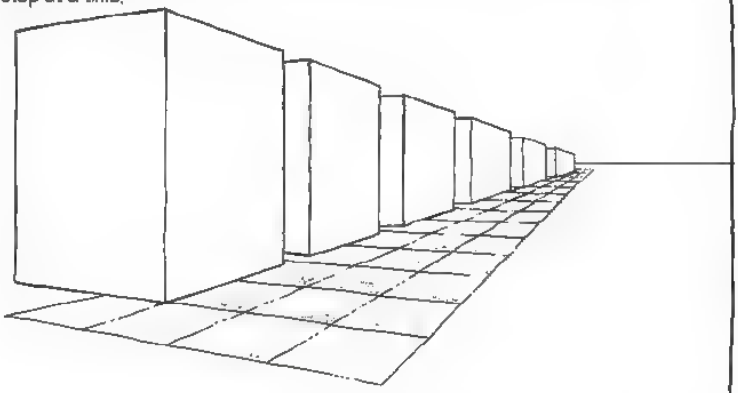
This is a 2-point perspective drawing with a wide-angle effect. Shall we analyze the process of constructing the space?



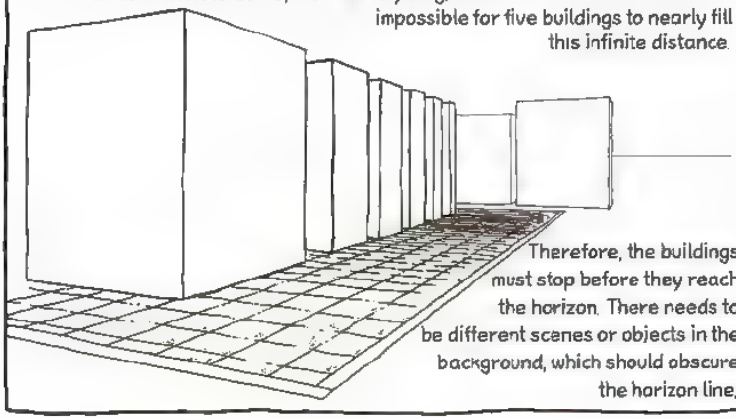



You can draw anything, as long as you get the horizon and vanishing points right. That requires a lot of practice and experience, of course.

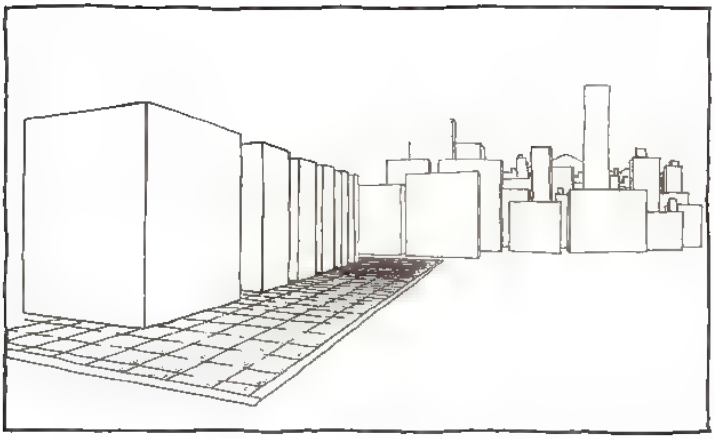
We've covered a lot of information so far. There are many points to pay attention to. But if you take your time and master each one of them, drawing spaces will come naturally to you in no time. Here's another important piece of information for you. It is a little tricky to explain it in writing, but let's take it one step at a time.

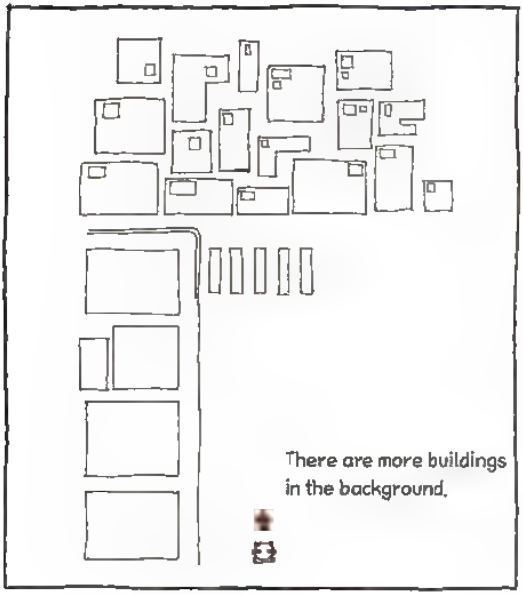


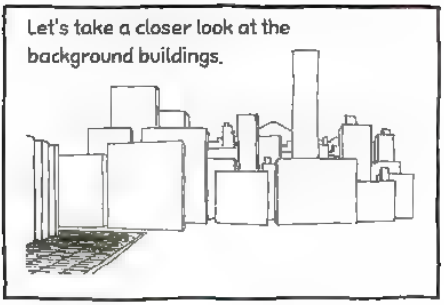
If you look at the first drawing, you can see that the buildings are shrinking adequately and that the van shing point is on the horizon as well. There's nothing wrong or off about it. But think about the distance between the vantage point and the horizon. How long do you think it is? Ten thousand kilometers? A hundred million kilometers? No, it's infinitely long. There is no end. And it would be impossible for five buildings to nearly fill this infinite distance.

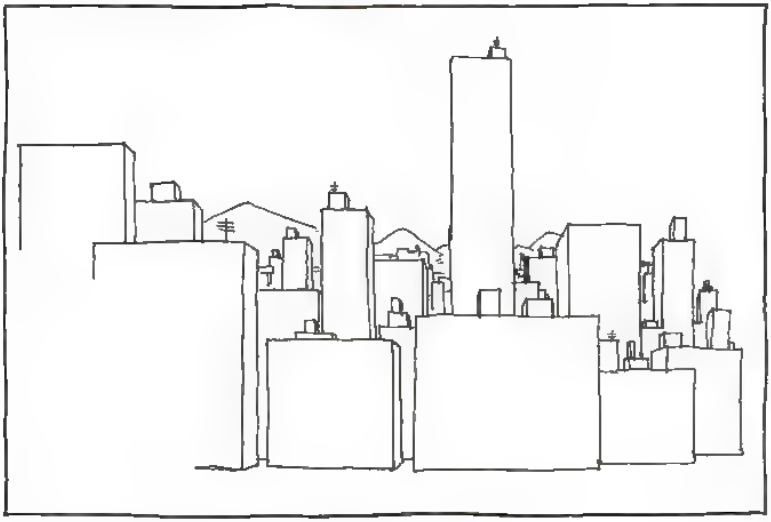


Therefore, the buildings must stop before they reach the horizon. There needs to be different scenes or objects in the background, which should obscure the horizon line.



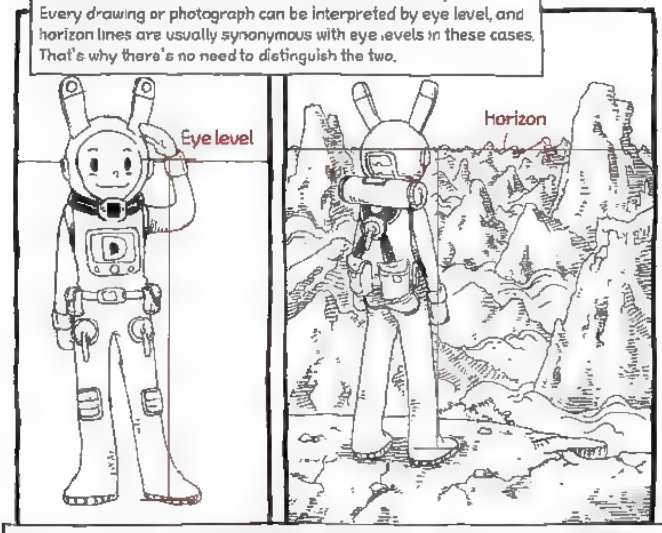

There are more buildings
in the background.



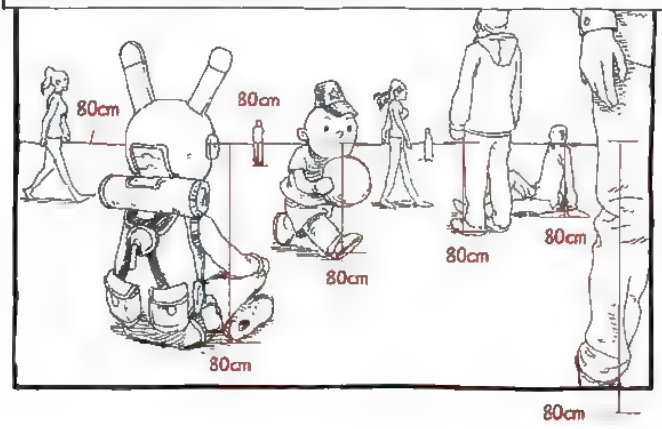


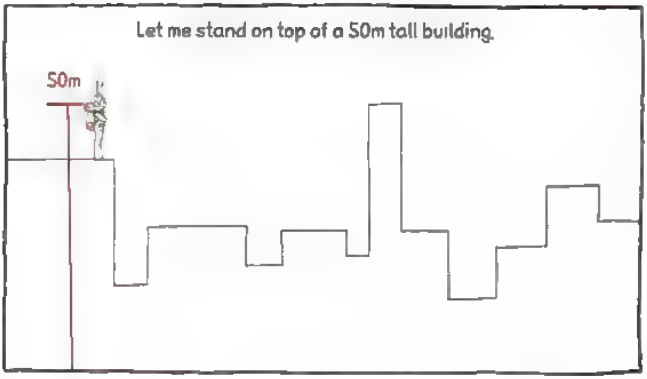
The perspective lines for the buildings in the front gather at the vanish ng point, but the ones in the back get flatter and flatter.

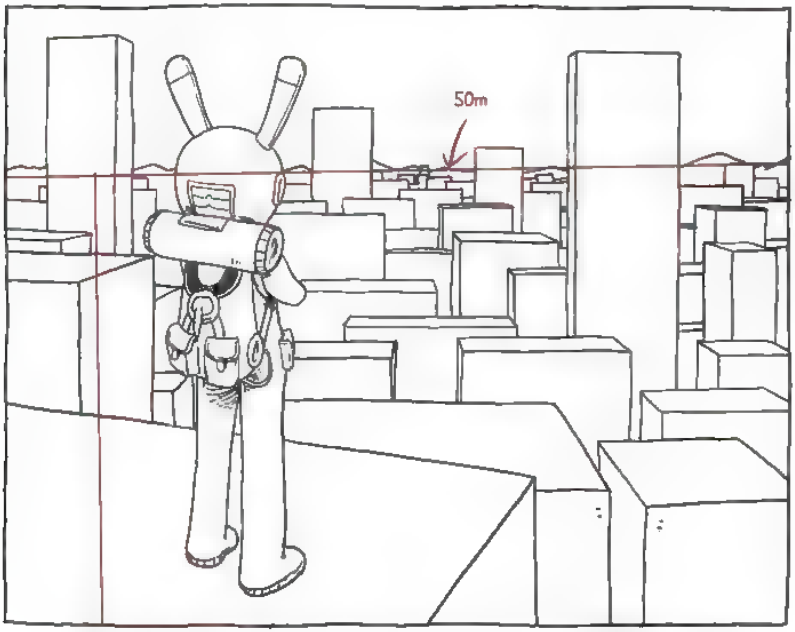
Let me go over eye level one more time. If I'm being precise, point of view, eye level and horizon (horizon line) are all different concepts. Eye level refers to the distance between the ground and the eye, and the horizon refers to the line between earth and sky. Every drawing or photograph can be interpreted by eye level, and horizon lines are usually synonymous with eye levels in these cases. That's why there's no need to distinguish the two.



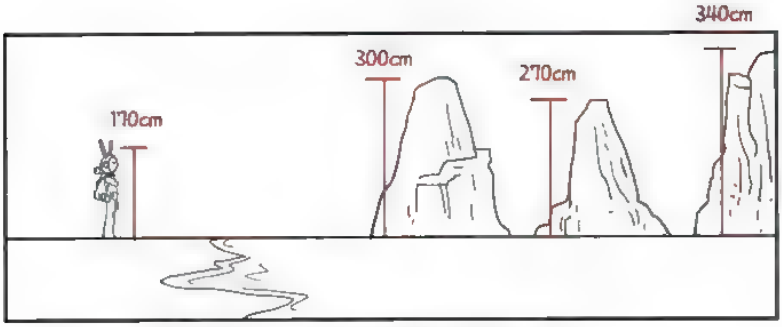
Let's say that my eye level when I'm sitting down is 80cm. That means that everything and everyone that is at my eye level is 80cm tall. And when something is so far away, the height of 80cm becomes insignificant and almost indistinguishable from the horizon. This is why we can say that eye level = horizon line. And I've already told you that the vanishing point is a made-up concept that was created because perspective lines that are parallel to each other are infinitely long and far away, and appear to meet at one point.



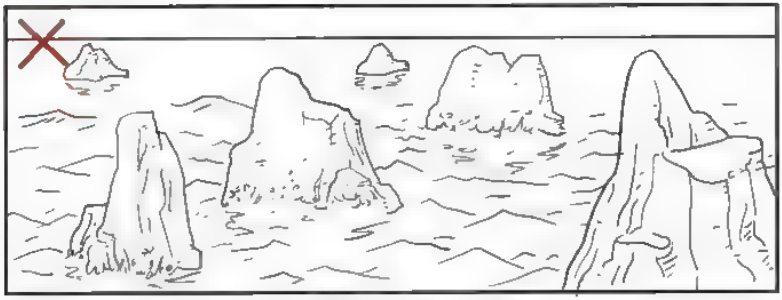




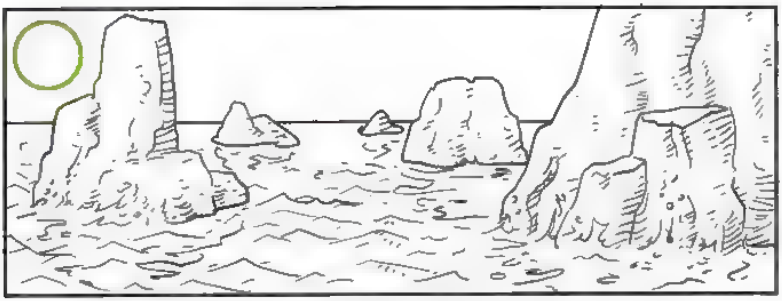
Now the horizon line is at the 50m point as well. The four buildings that rise beyond the horizon must be taller than 50m, and all the other buildings must be shorter than that.



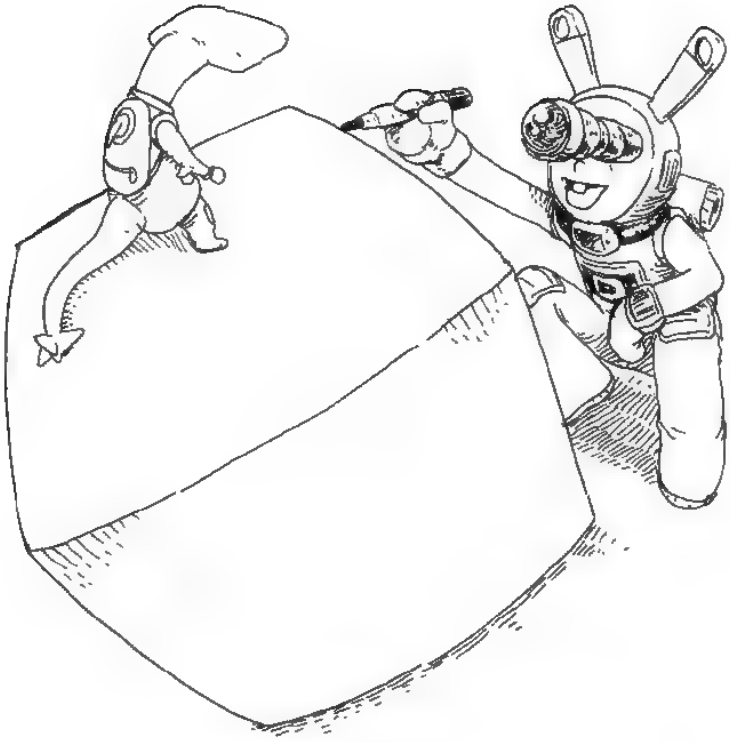
First, decide on the objective size of things.

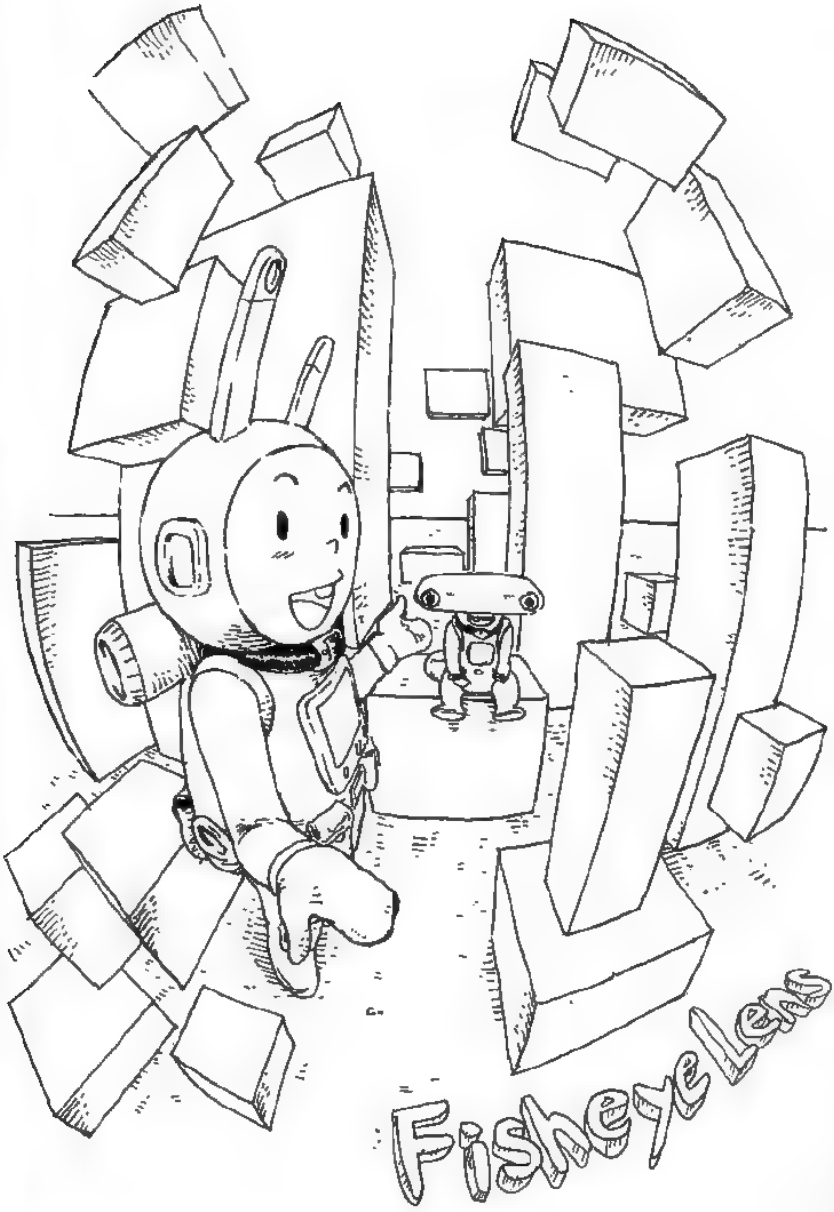


Here's a drawing with some perspective.
But what's wrong about this one?

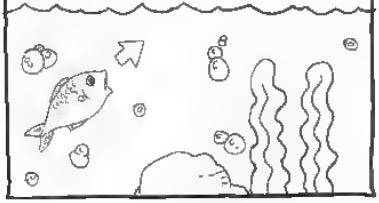


All the islands must be taller than my eye level.

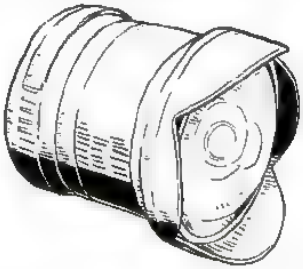



Fisheye Lens

"Fisheye" means, well, the eye of a fish. Some people say that the term came from the fact that from a fish's perspective, the world outside of the water looks distorted because of the retraction of light.



Other people say that the name comes from the shape of the lens, which is round and protruding like the eye of a fish.

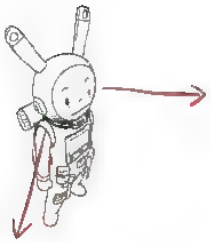


None of that is too important. What we need to know is that we call perspectives with a fisheye lens effect 4-point or 5-point perspectives. You can understand it as a type of a wide-angle perspective.
More precisely, this is an ultrawide-angle perspective.

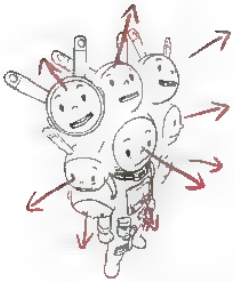
This is the typical viewing angle. For 2- or 3-point perspectives, the distance between the left and right vanishing points must be quite long.

This is the viewing angle of a wide-angle lens. As much as the field of vision increases, the distance between the vanishing points decreases.

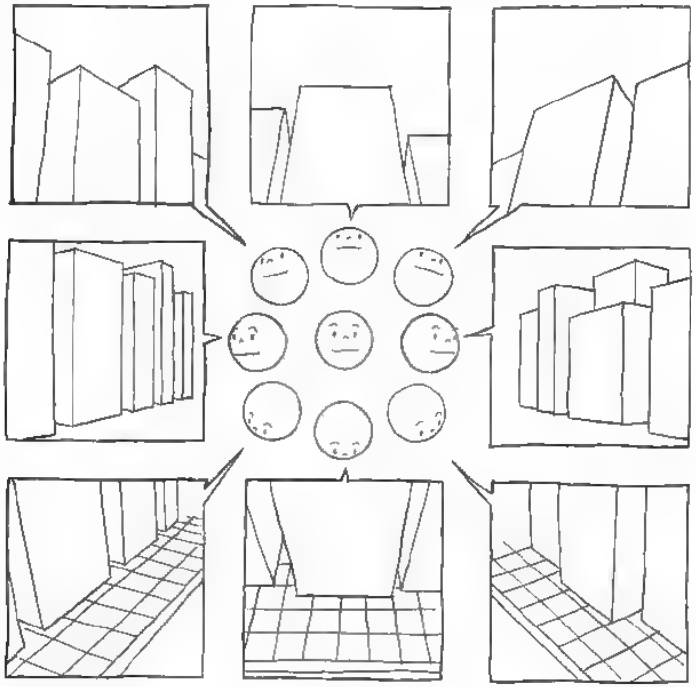
This is the view ng angle of a fisheye lens. It's fair to assume that you can see everything in front of your eyes. You con even see your toes because they're also past where your face is.

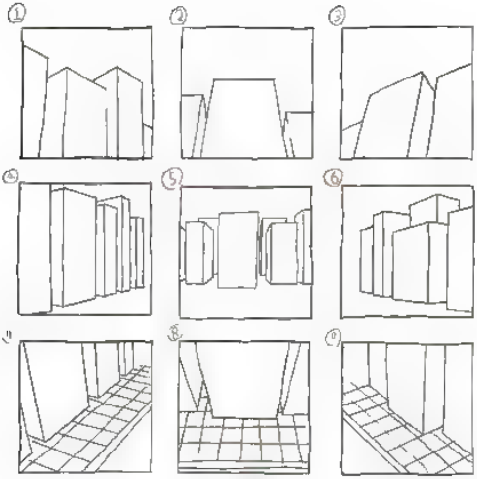


If regular- and wide-angle perspective was about expressing what you see when you look in one direction in varying viewing angles,

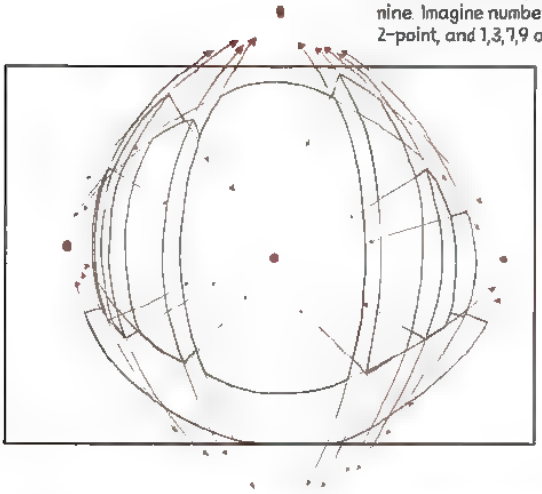


The fisheye (ultra wide-angle) lens is about gathering all views from all directions and combining them into one view



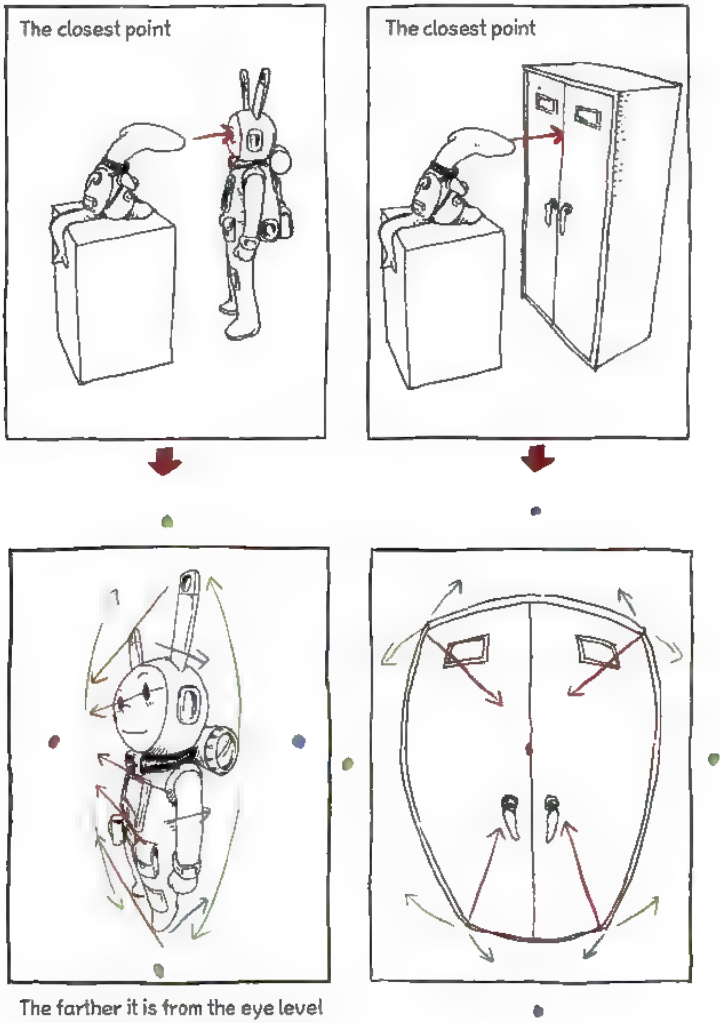


It's a combination of images from different angles. For the sake of demonstration, I'm counting nine, but there are many more angles between these nine. Imagine number 5 is a 1-point, 2,4,6,8 are 2-point, and 1,3,7,9 are 3-point perspectives.



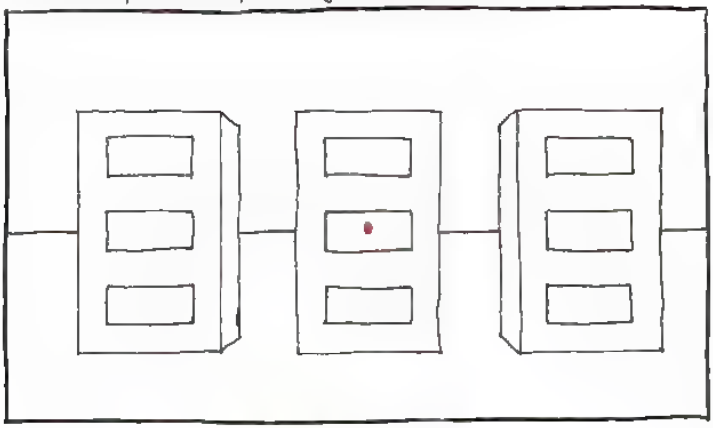
You're looking straight on (1-point) but you also look to the left and right (2-point) and up and down, diagonally too (3-point).
In conclusion, you have one in the middle, one above, one below, one on the left, and one on the right, so five vanishing points in total.

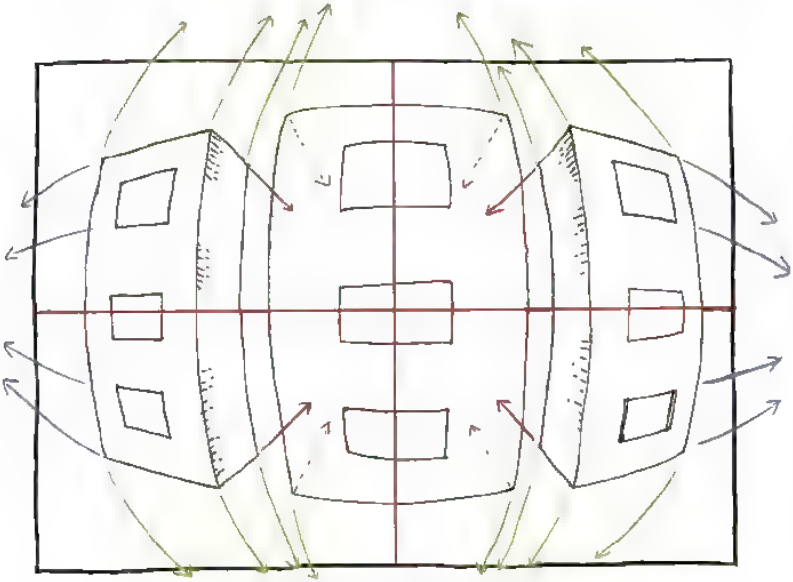
If I may reiterate, 1- and 2-point perspectives are concepts created for convenience's sake. They are not realistic. Why? The whole point of perspective is to express an impression of distance from the point of view. Everything, except for what's right in front of your eyes, should have some distance



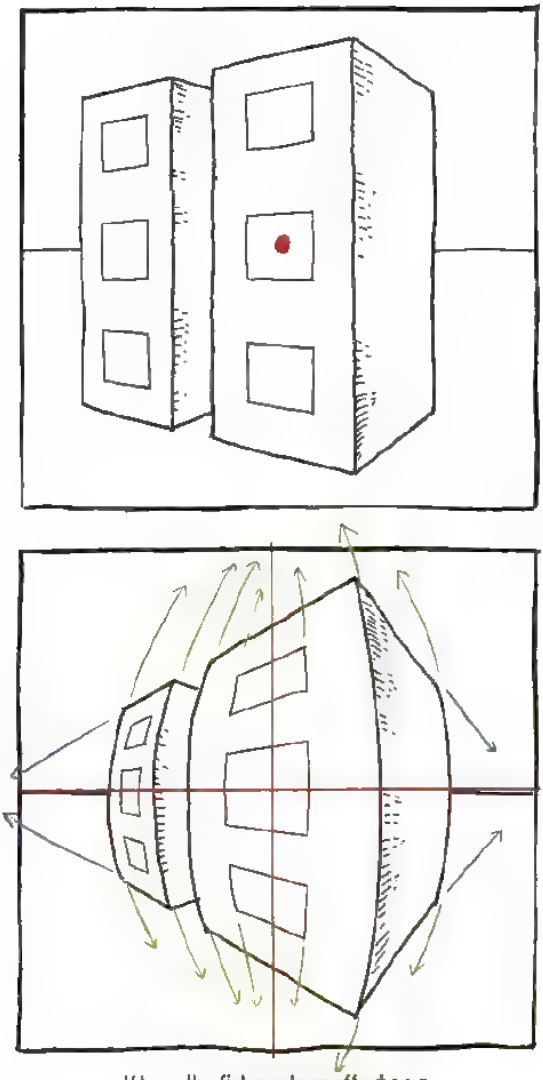
The farther it is from the eye level (point of view), the more it shrinks.

Let's say that the red dot is the closest point to me. I'll show you how to create an impression of space using that as the center.





It looks like the middle is swelling.
But if you understand that everything except for the middle is shrinking because it's moving away from me, this drawing will make more sense.



If I use the fisheye lens effect on a
2-point perspective, we get a 4-point perspective.

THIS IS A PANINI
PLACE IN FLORENCE.

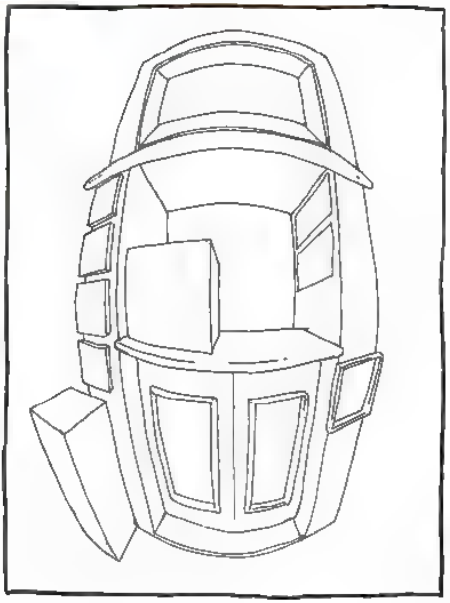
'FIRENZE',
THE CITY OF FLOWERS.
I LOVED THIS CITY SO MUCH
THAT I WALKED UNTIL
MY BUTTCHEEKS WERE CHAFED.

2018.09 KIM DONG-HO

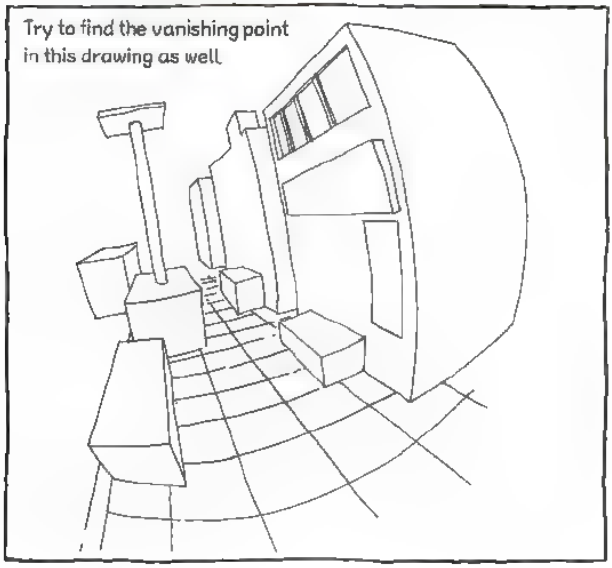
This is what it looks like in real life.

How can we interpret this into a 5-point perspective drawing?

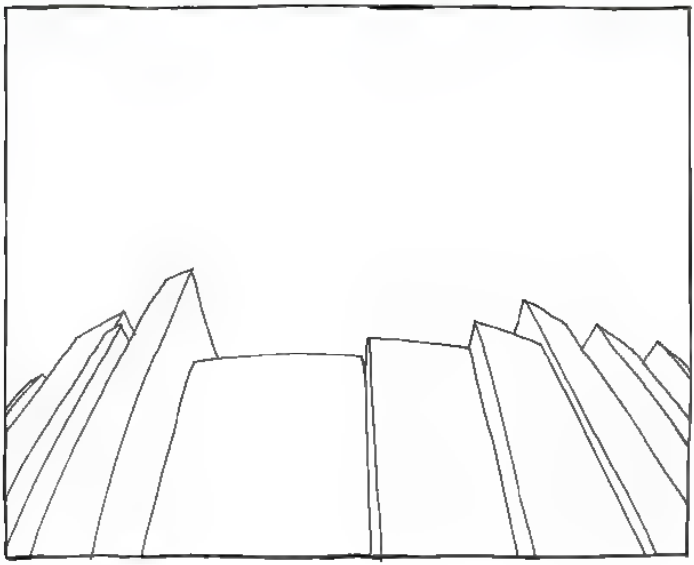
I went and geometricized it. Can you find the five vanishing points?



LITTLE PAPA PUB
My Favorite
Restaurant.
Little pAPA.
In Hapjeong.
2010 02
KTM DongHo.

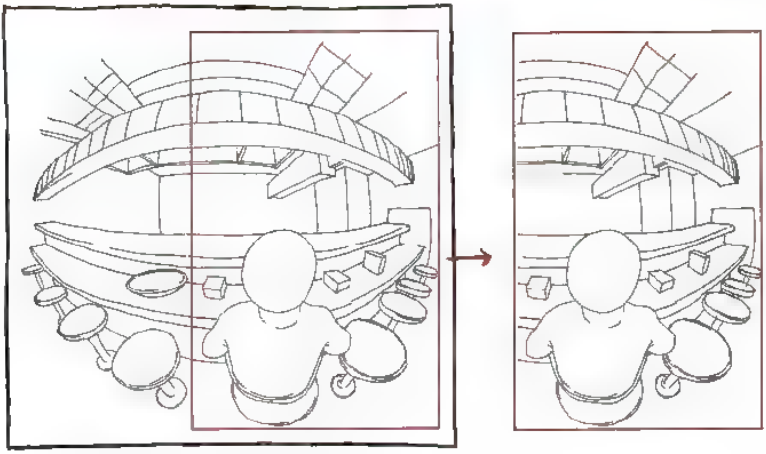

Try to find the vanishing point
in this drawing as well

This is part of a 5-point perspective drawing.
Try to find the vanishing points here too.



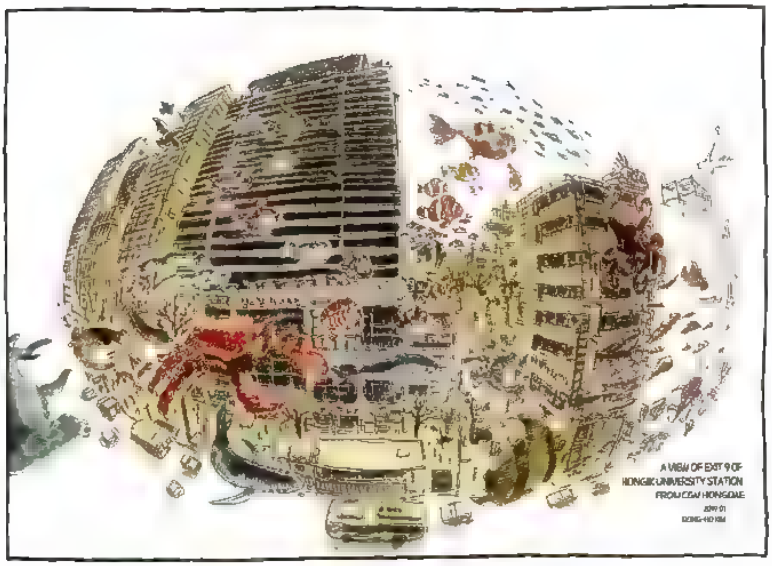
Kuzaku in Hongdae

Just a thought that came to mind, Japan has the reputation of putting a lot of care and effort into every little detail when it comes to food. And in the many things that they do, you can sense the underlying philosophy of Edomae-shingaku by Ishida Baigan. One thing they really emphasized was the merchant code, which believes that "a true merchant only exists when a customer does."

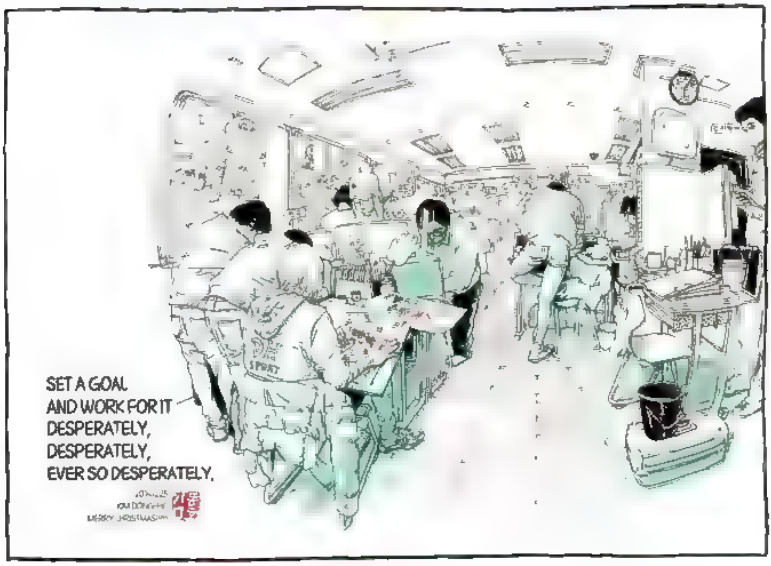


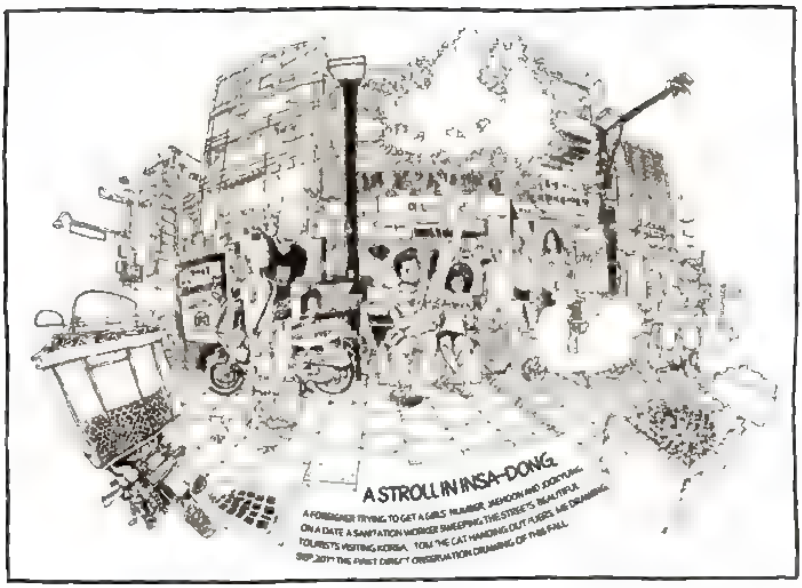
What I mean by "part of a 5-point perspective drawing" is that I only drew a certain part of a larger drawing.

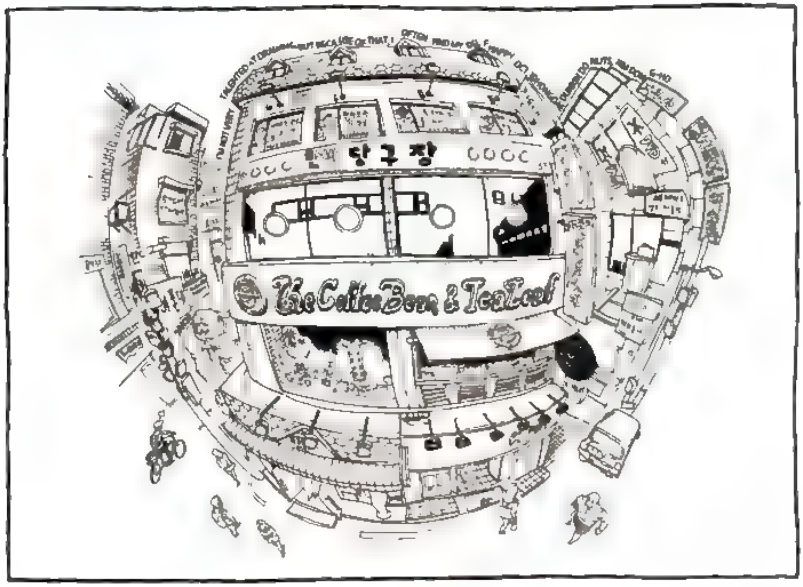
~ Draw it yourself!



A VIEW OF EXIT 9 OF
HONGIK UNIVERSITY STATION
FROM COEX HONGDAE

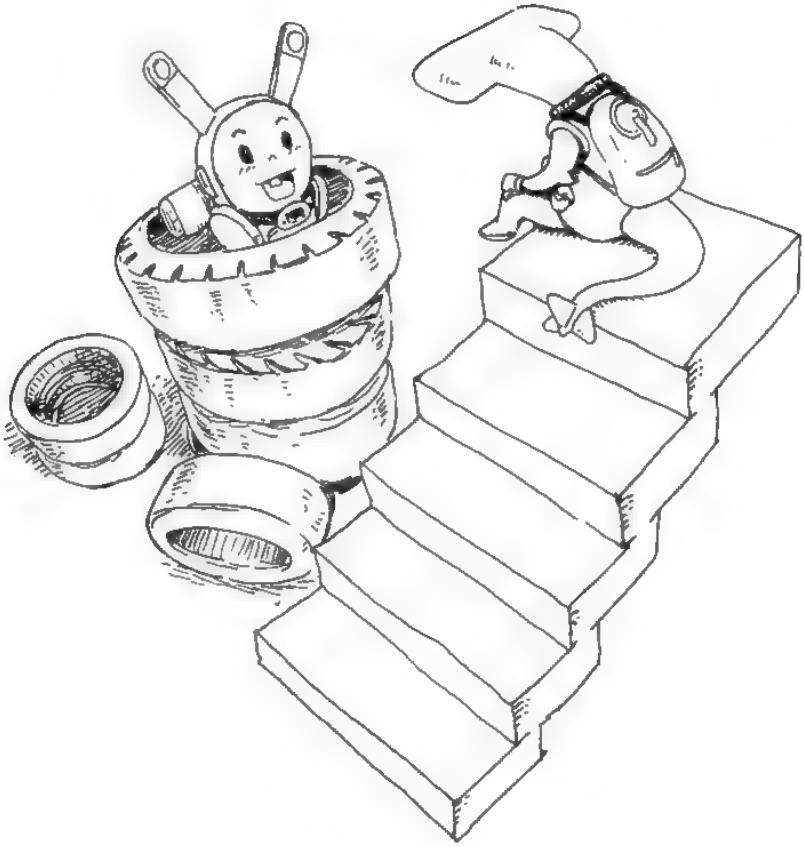



A STROLL IN INSA-DONG


The Cotton Bean & Tea Leaf

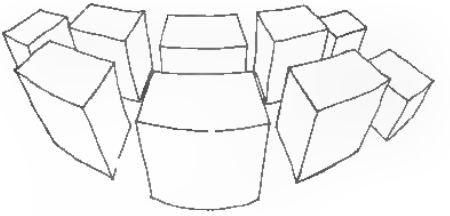
PART 05

DRAWING OBJECTS OF VARIOUS SHAPES

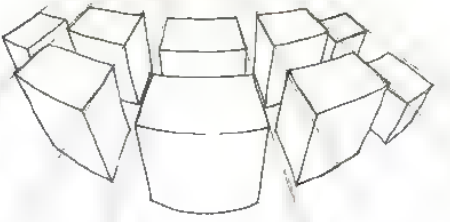


Drawing objects of various shapes.

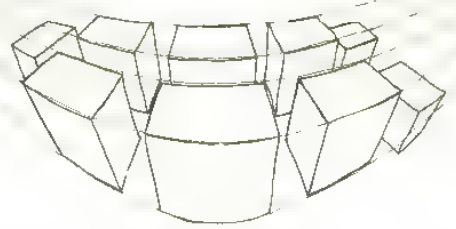
Here are some boxes through a fisheye lens. Let's look at the guidelines used in this drawing.



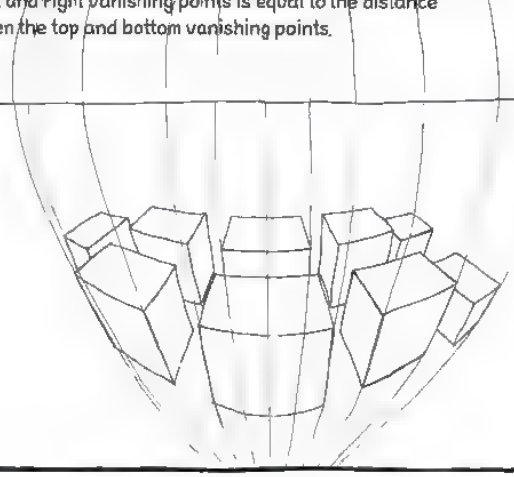
First of all, we have one vanishing po nt in the middle, like a 1-point perspective.



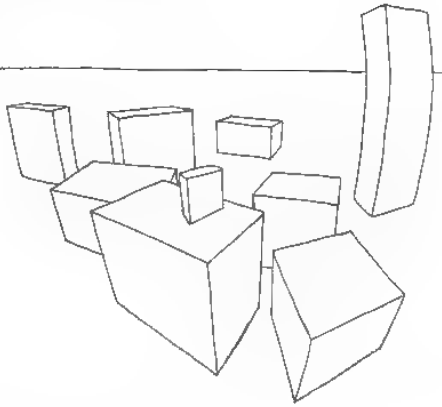
We have two vanishing points, one on each side.



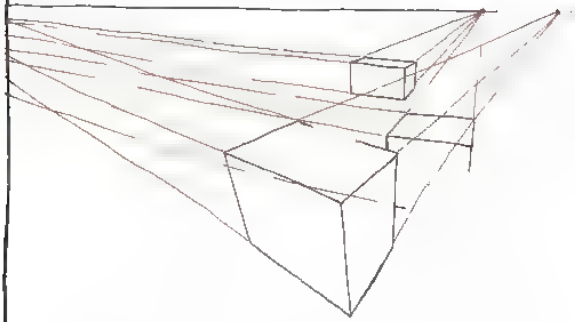
We also have one below. Make sure that the distance between the left and right vanishing points is equal to the distance between the top and bottom vanishing points.



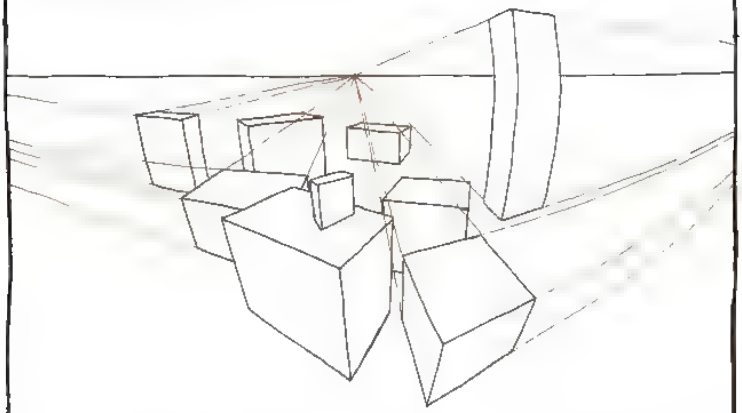
Let's look at box shapes at all sorts of different angles.



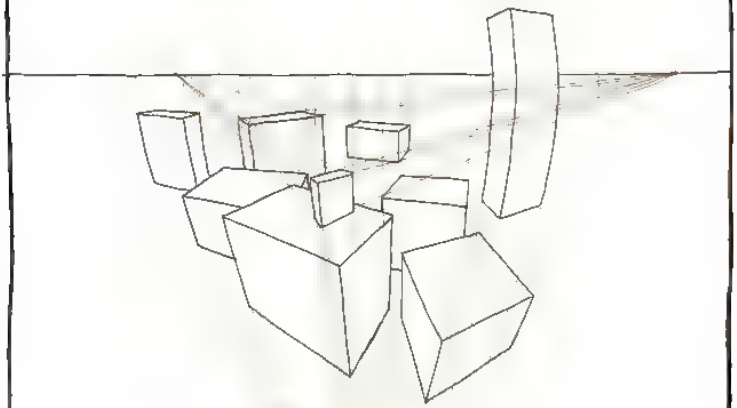
Since there are so many, let's look for their vanishing points in groups.

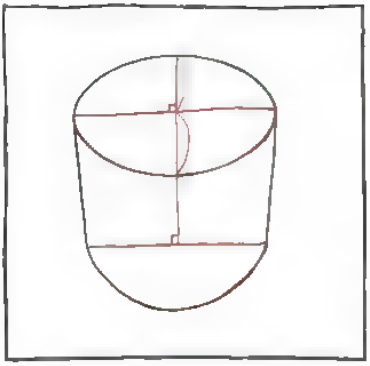


Find the perspective lines that gather
at the center vanishing point.



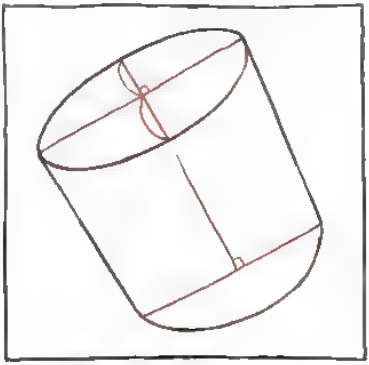
Find the vanishing points for the other two buildings.
See how the left and right vanishing points are on the eye level?



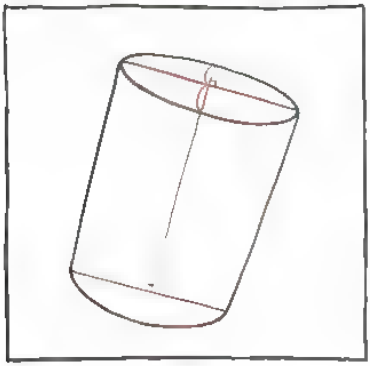


Let's draw a cylinder from different angles.

Here's a cylinder from a downward angle. Notice that the top surface appears to be ovular, and that the major and minor axes are perpendicular to each other.

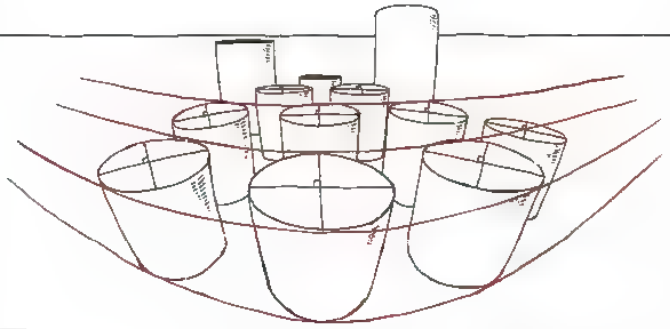


I've twisted the angle a little bit. The top surface becomes a flatter oval shape. But the two axes are still perpendicular to each other.

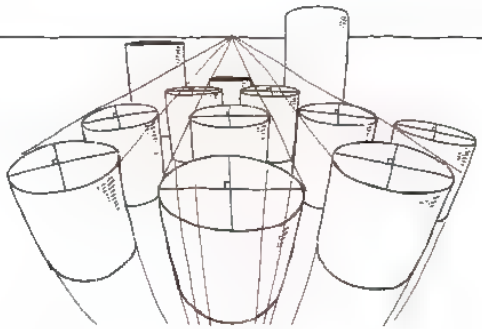


Here's another angle. The oval is even flatter now, and it looks like I'm looking at it from the side. Practice drawing from a variety of angles.

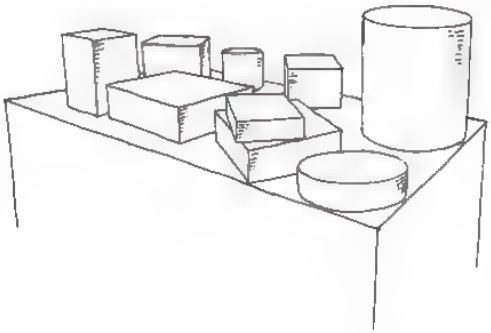
Here are a dozen different cylinders.
Do you see how the major axes of the
cylinders on the sides curve outward?



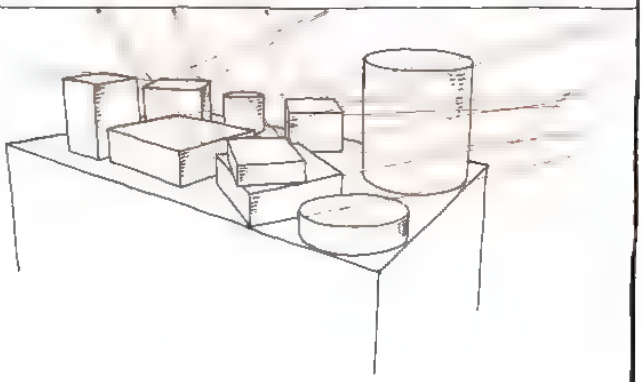
Find the center vanishing point and the bottom vanishing point.
Pay close attention to the size difference in the top
surface of the cylinder that's in front and the surface of
a cylinder in the back.



There are a variety of objects on the table.
They are all of different angles and shapes.

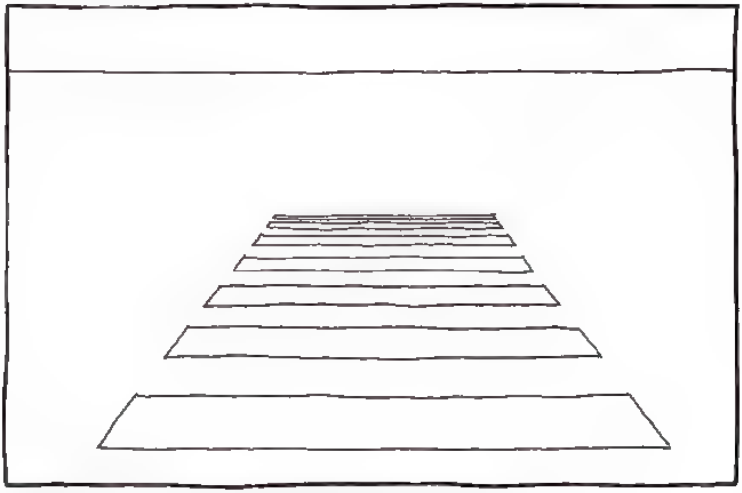


As always, draw perspective lines to make sure
that they all meet on the horizon line.

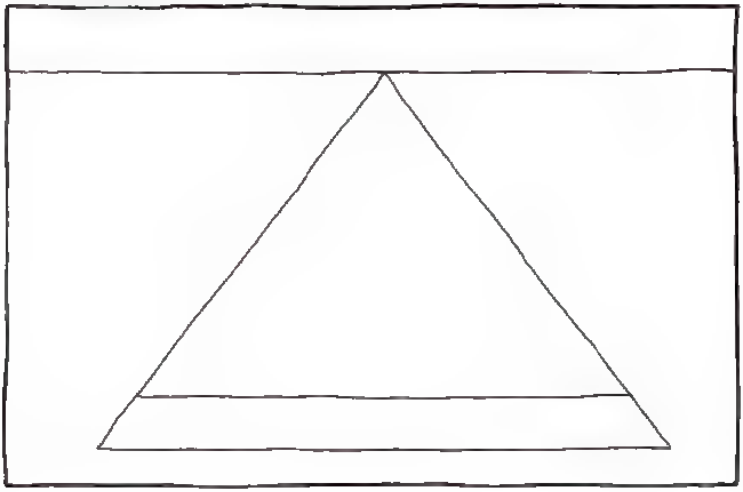


Draw it yourself!

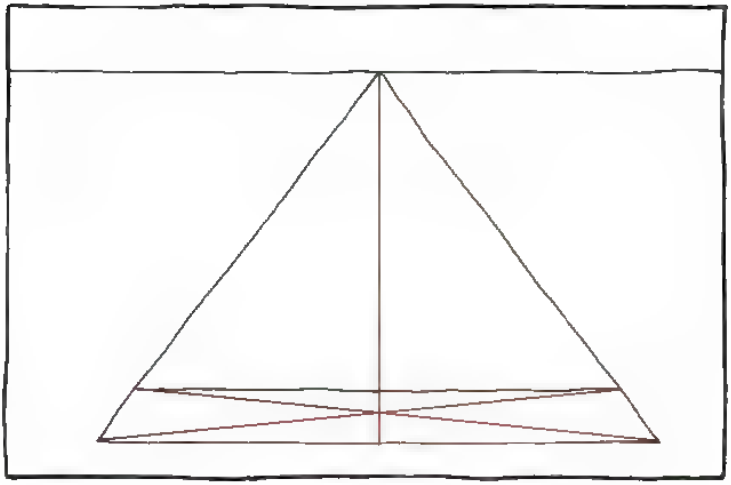
So far, we've been learning about and practicing how to construct the overall framework of a spatial drawing in a natural way, with extra emphasis on shrinkage in surface areas. Now, let's take some time to think about how much shrinkage should take place.



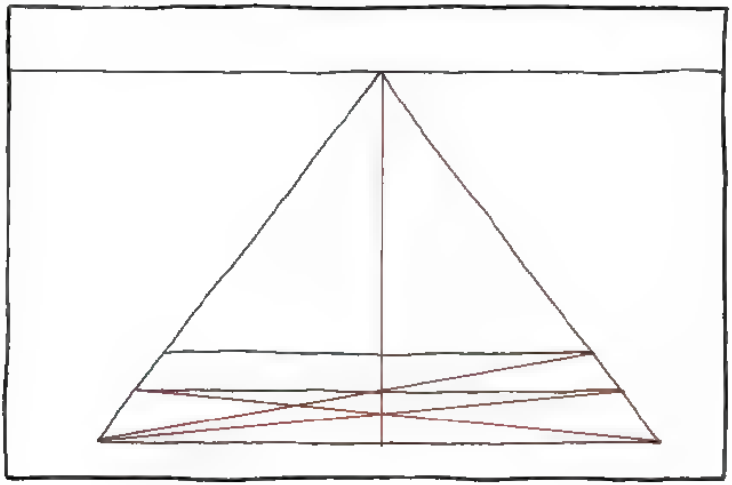
First, draw a quadrangle according to the vanishing point.



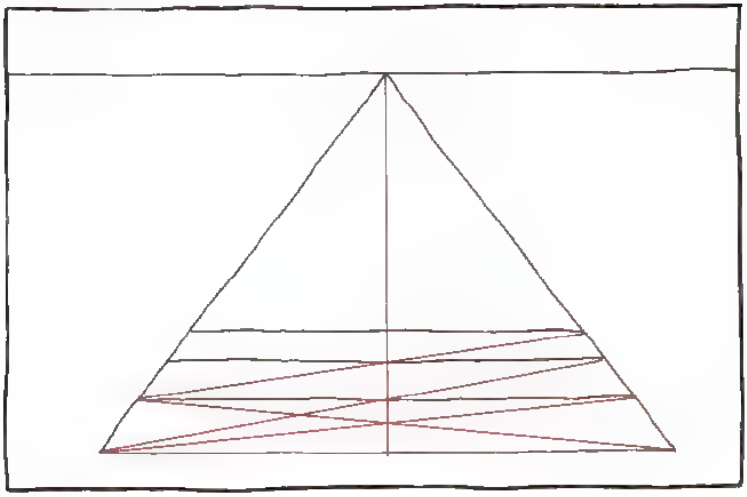
Draw two diagonal lines inside the quadrangle to find the center point, and then draw a vertical centerline.



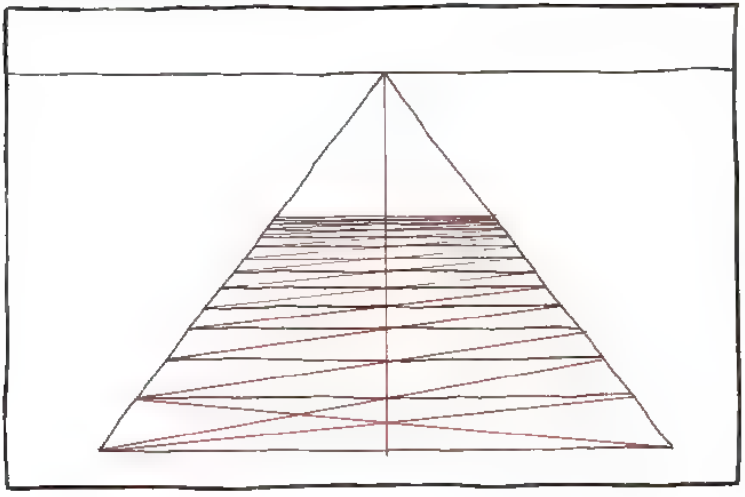
Draw another diagonal line that passes through the point at which the top line of the first quadrangle and the centerline intersect. Draw a horizontal line. Now you have a second quadrangle.



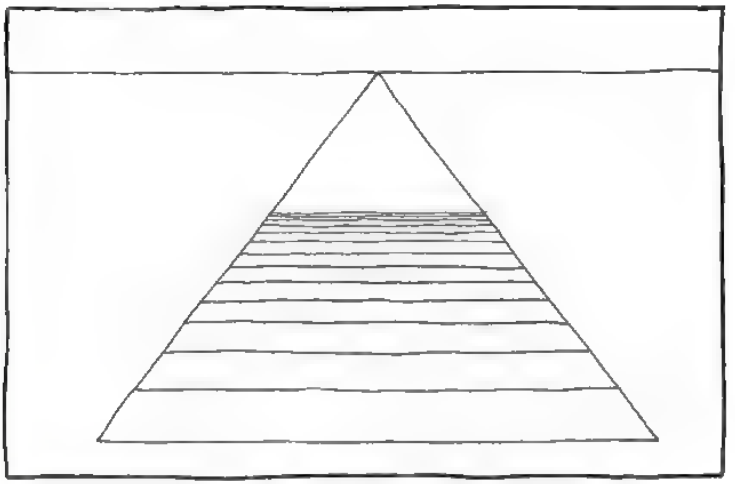
Draw another diagonal line, and then a horizontal line, and you get a third.



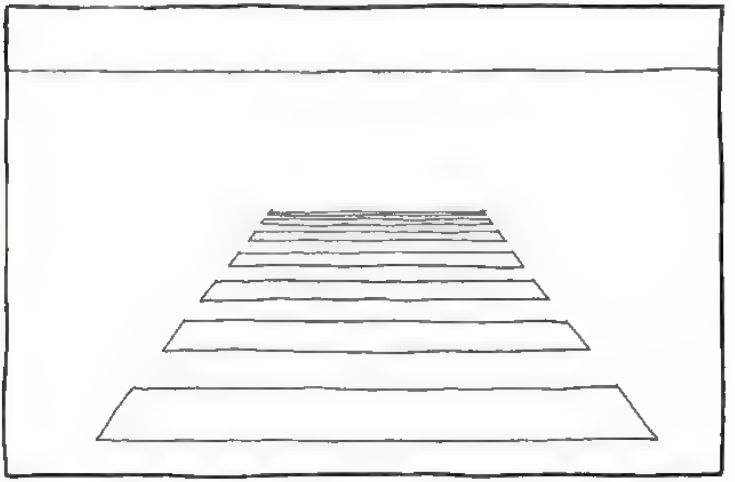
Repeat the same process. Stop at an appropriate point instead of going all the way.



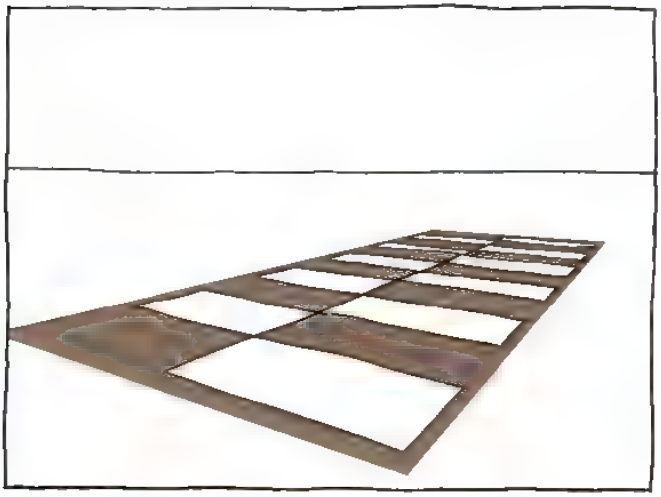
Erase the red guidelines.



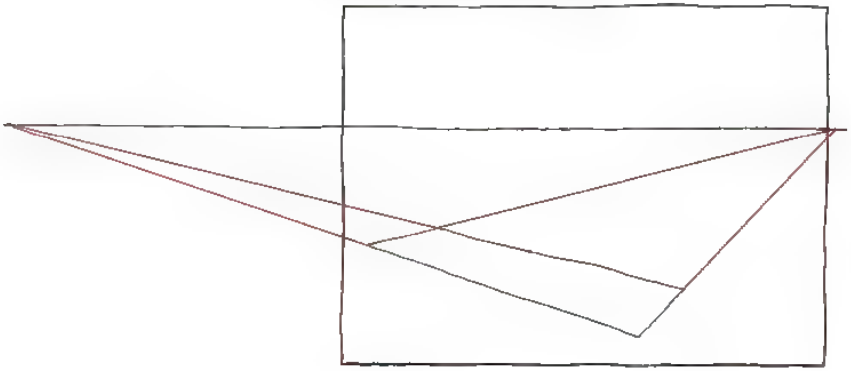
Erase the lines for every other quadrangle,
and you get a naturally shrinking crosswalk.



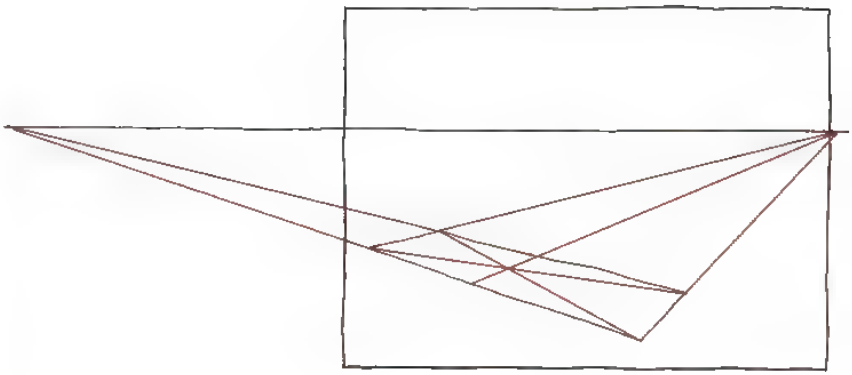
Let's try drawing a crosswalk from a 2-point perspective.



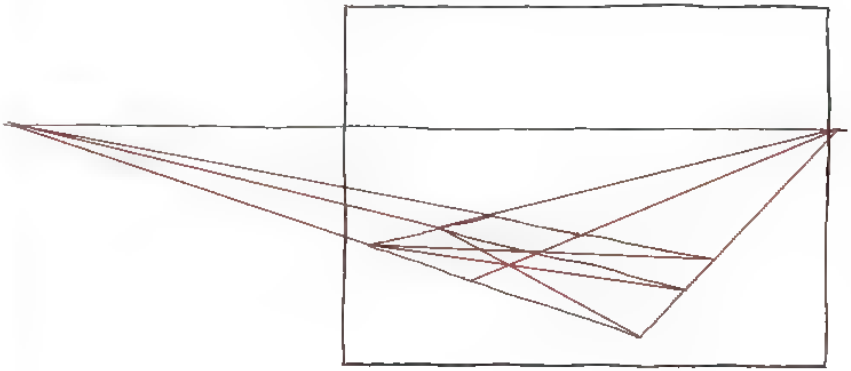
First, draw a quadrangle according to a 2-point perspective. One vanishing point should be closer and the other farther away.



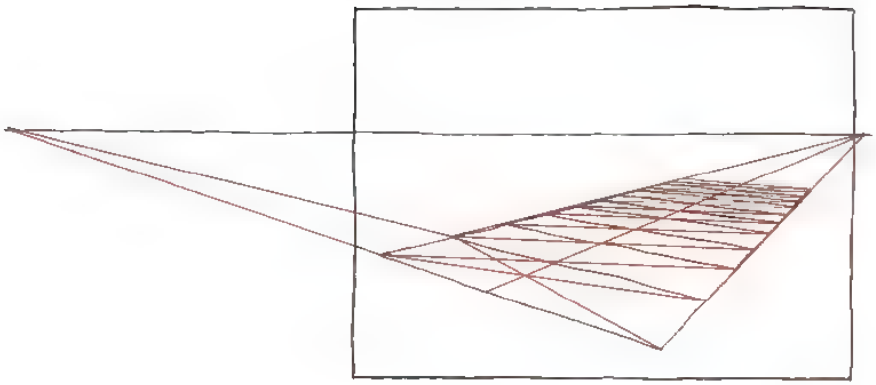
Find the center of the quadrangle.



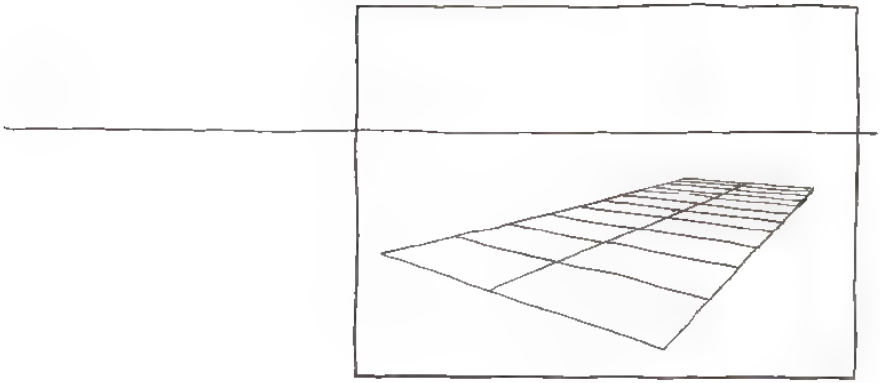
Draw a new line to create another quadrangle. Make sure that everything still aligns with the perspective lines.



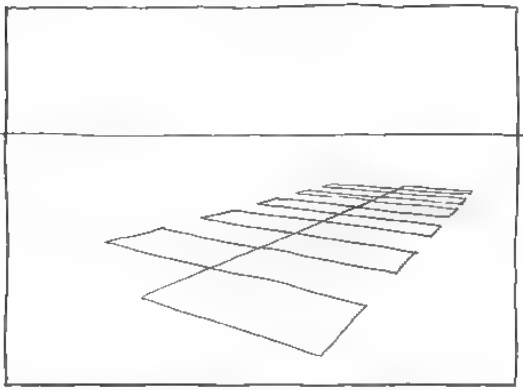
Repeat the same process and
stop at a good point.



Erase the guidelines
and check the shape.

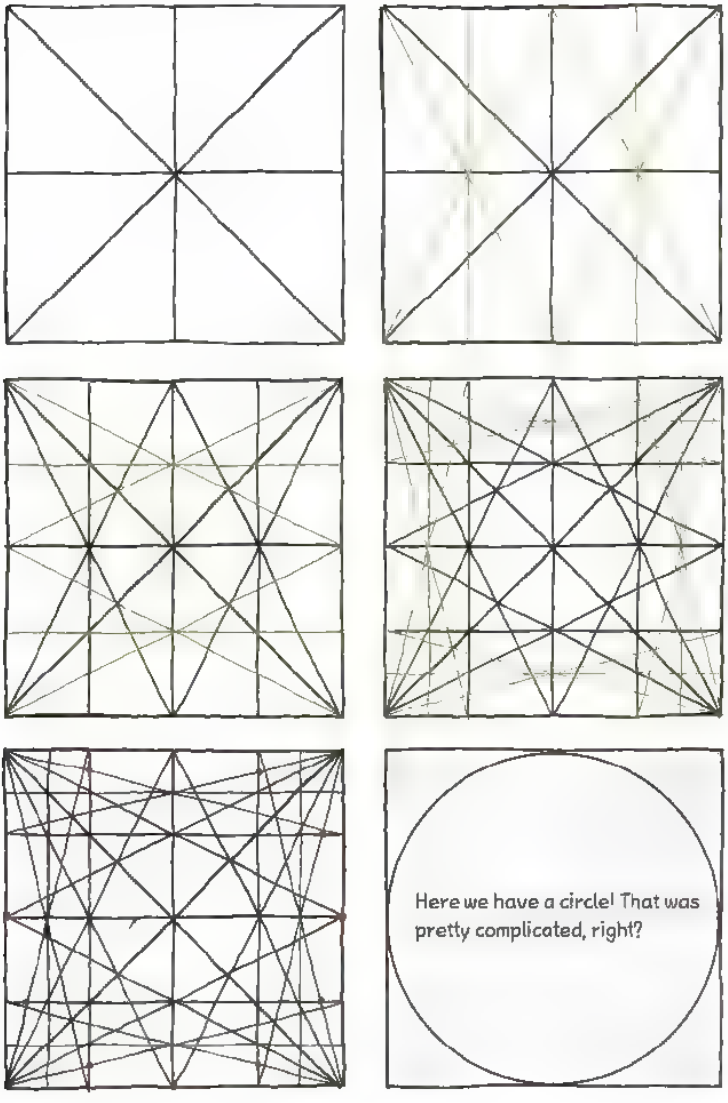


Erase alternating quadrangles to make it look like a real crosswalk. It'll look more realistic if the painted areas have a little bit of distance between each other, so you can make adjustments as you see fit.

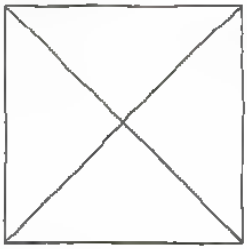


Here's an application of what we just learned. If you want to really master all these principles that you're learning, make sure to practice applying what you've learned in your own works of art.

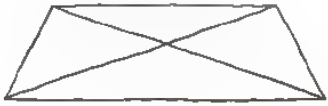
Let's try drawing a circle this time.
Follow along.



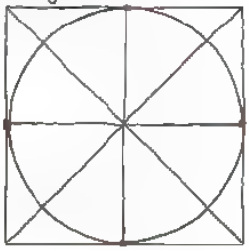
1) Let me simplify things, although it won't be as accurate



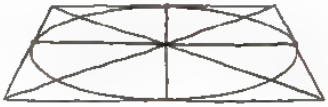
1) Let me draw a circle inside a square that is in perspective.



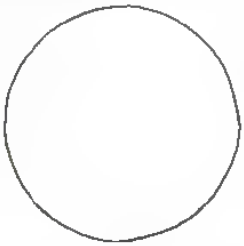
2) Draw a circle using the red dots as guides.



2) Once it's in perspective, a circle always looks ovular.

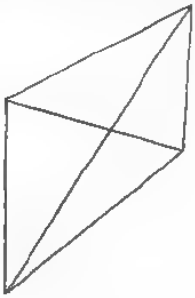


3) Practice getting the ratio right in all directions.

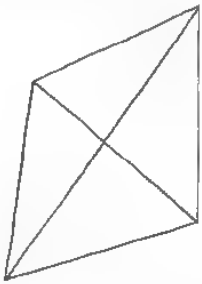


3) Make sure that the oval is symmetrical. But the centerline must appear to be a little farther back.

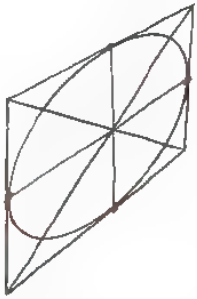
1) Here's a square from a downward angle.



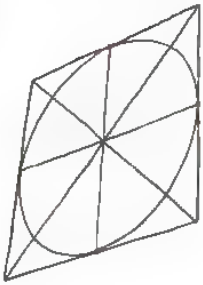
1) Here's a square from an upward angle.



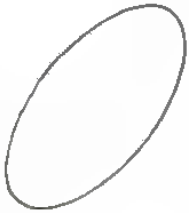
2



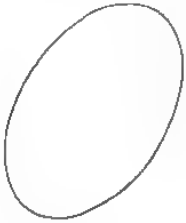
2



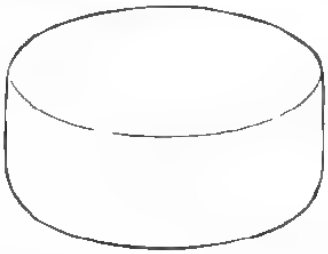
3) The circle always looks like an oval.



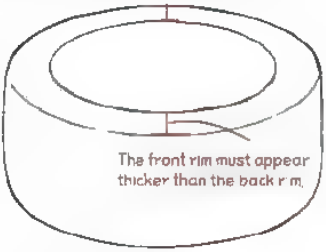
3) This too looks like an oval.



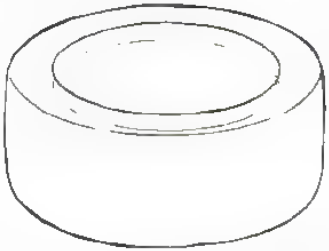
1) Draw a cylinder the size and shape of a car tire.



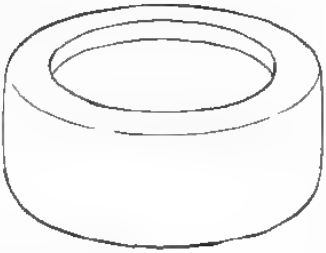
1) Draw a little circle in the middle. Make sure that it's well centered.



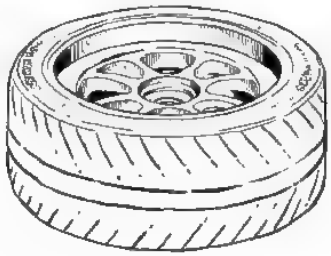
3) Create depth.



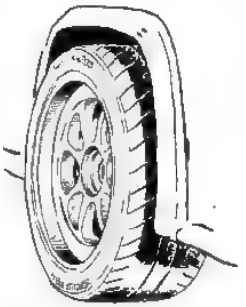
4

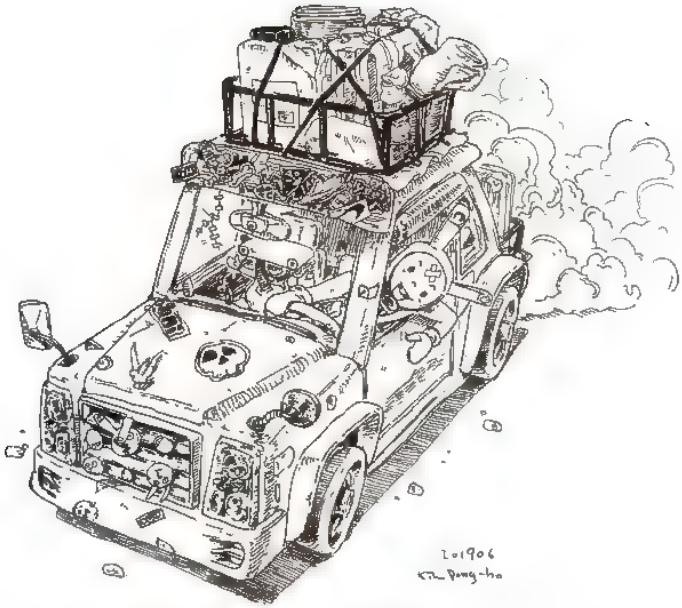


5) Add details.

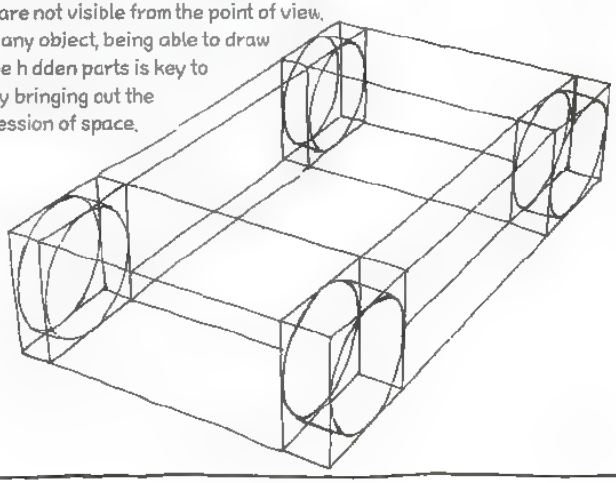


6

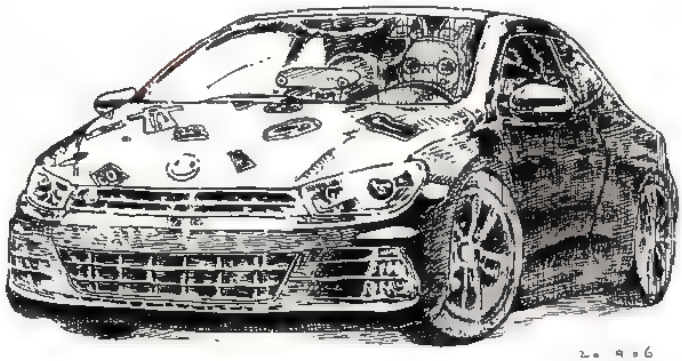




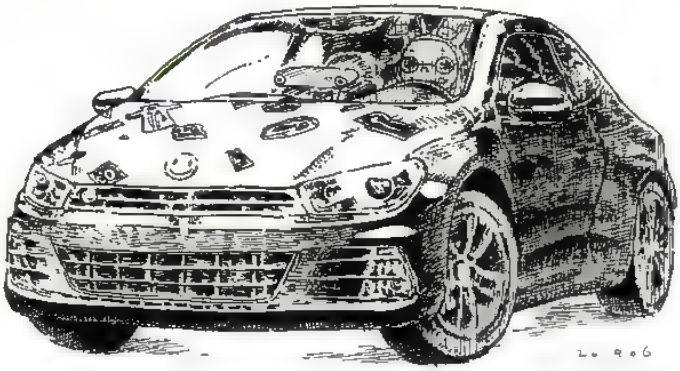
Practice drawing all the tires, even the ones that are not visible from the point of view. With any object, being able to draw all the h dden parts is key to really bringing out the impression of space.



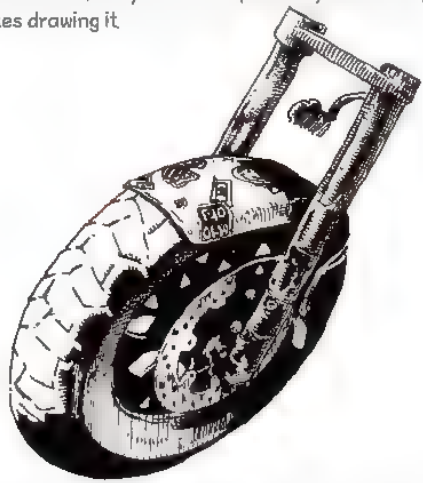
Do you notice which part looks awkward in this drawing? The fender looks off. The wheel almost looks like it's stuck in place so that the car can't move properly.



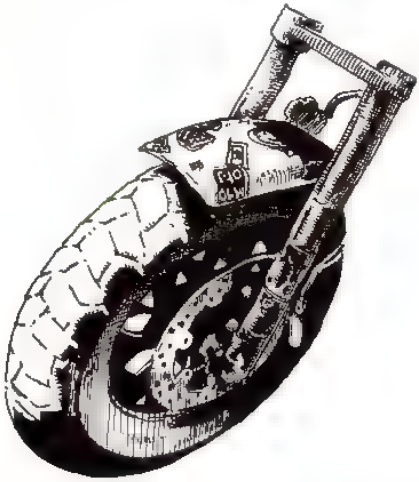
Does it look more stable now? This is why it's important to understand the structure of an object when you draw.



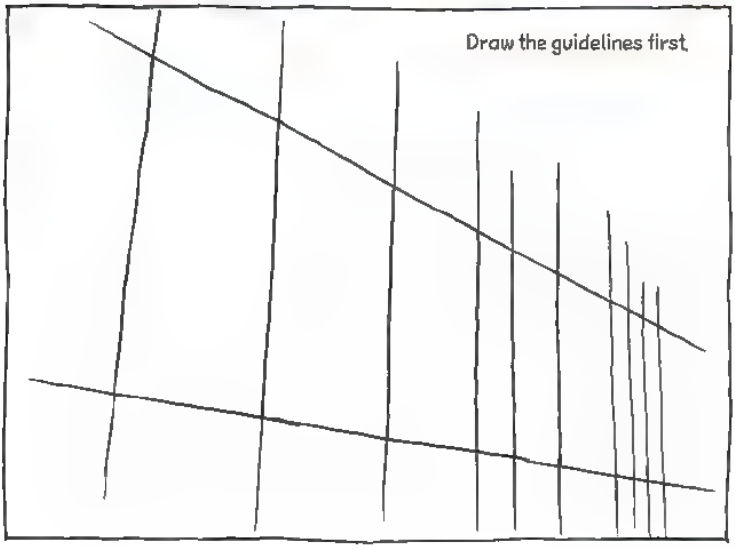
The same rule applies when you draw a motorcycle. This might look pretty straightforward, but you'd be surprised by how often people make mistakes drawing it.

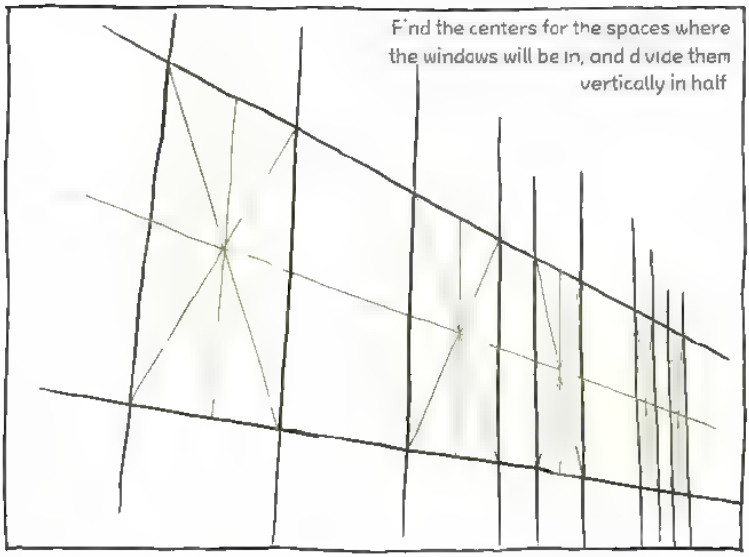


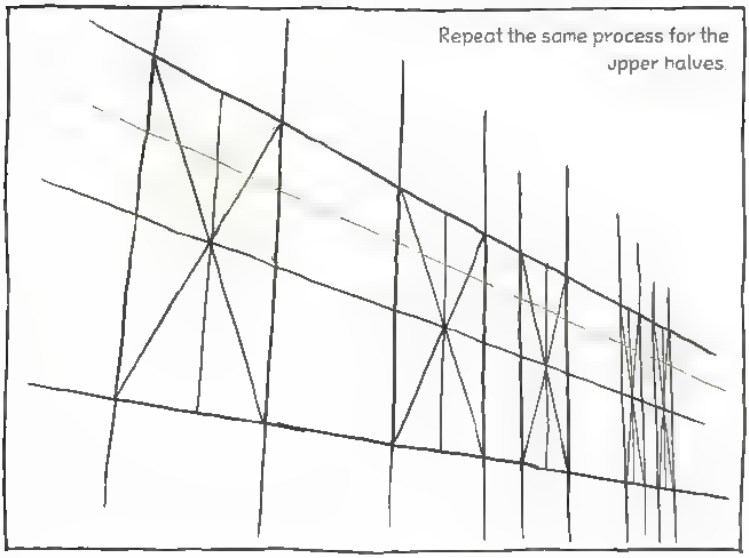
Use shadows to maximize the impression of space.

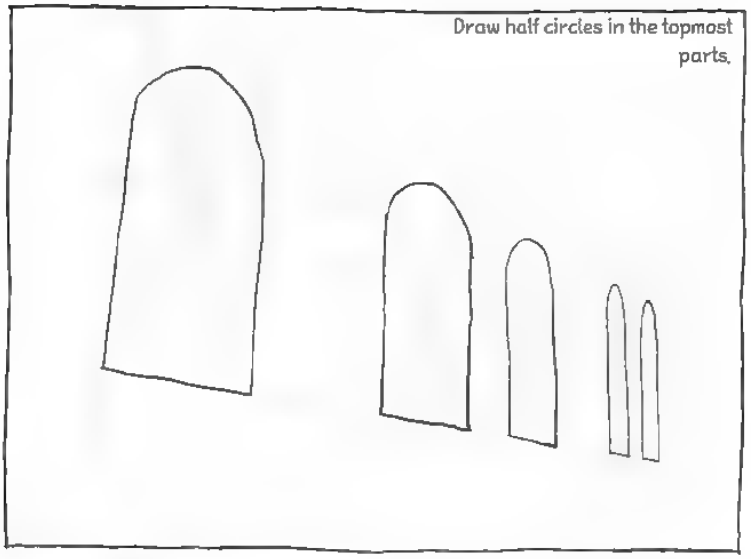


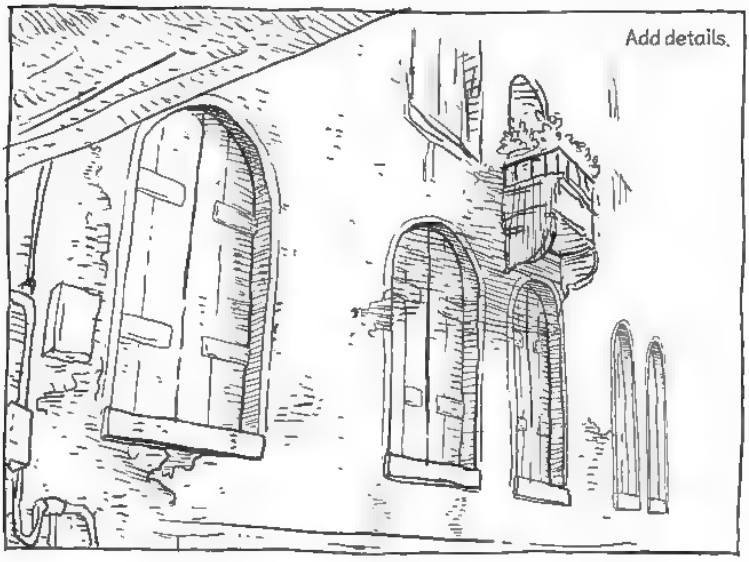
This is a window in Venice. Let's apply what we learned about drawing circles.




Find the centers for the spaces where
the windows will be in, and divide them
vertically in half

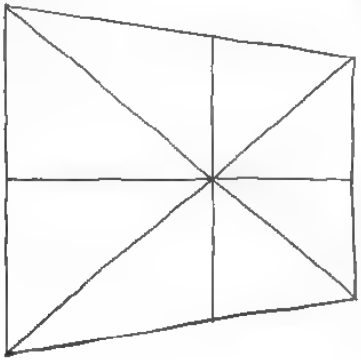

Repeat the same process for the
upper halves.


Draw half circles in the topmost parts.

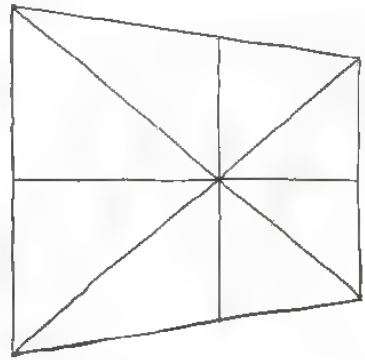

Add details.

Dividing into thirds

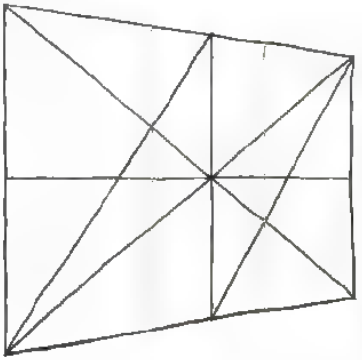
I'm going to draw three windows. First, establish the size of the overall framework, and then find the center point.



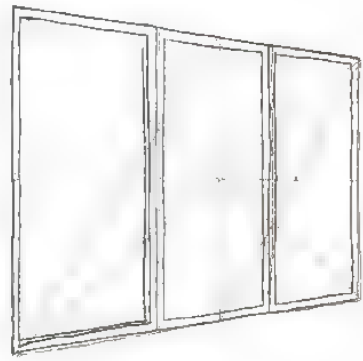
Draw two more diagonal lines like such.



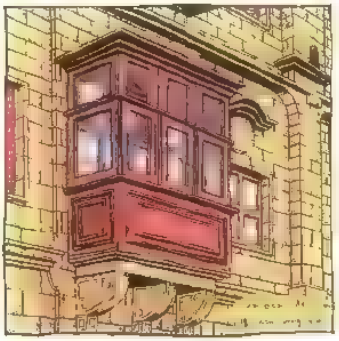
Draw vertical lines where the second set of diagonal lines meet with the first set, and you have three sections of equal size.



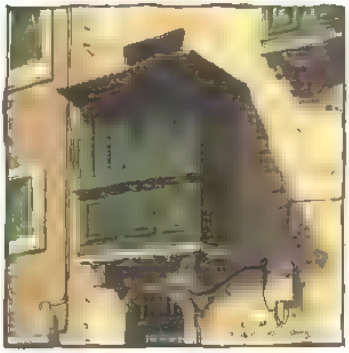
Add details.



Applications



Here are three windows drawn
using the technique that I just explained.

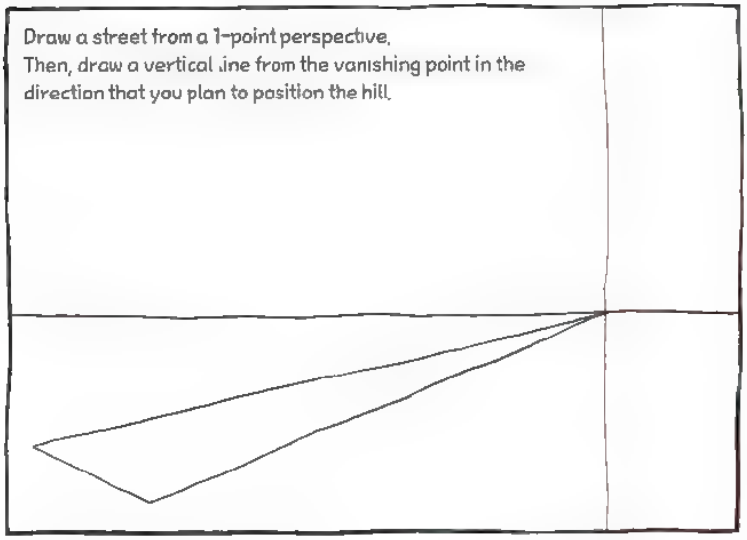


If you know how to divide in half and
thirds, you can do a lot with it.

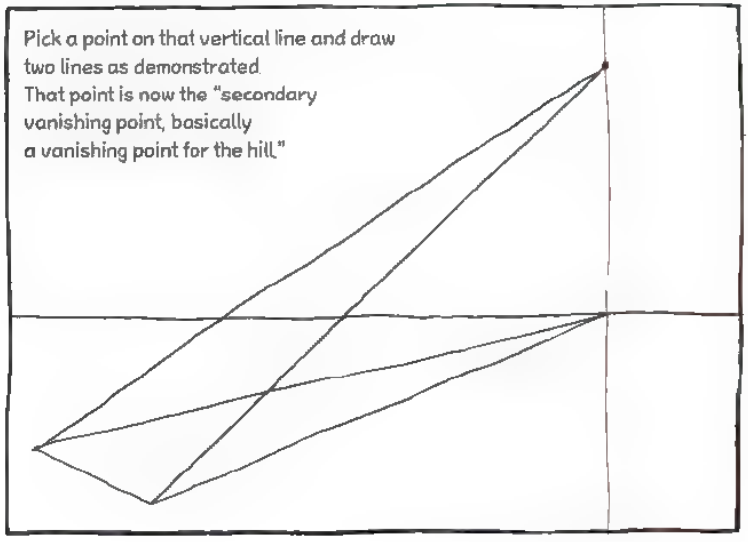
Draw it yourself!

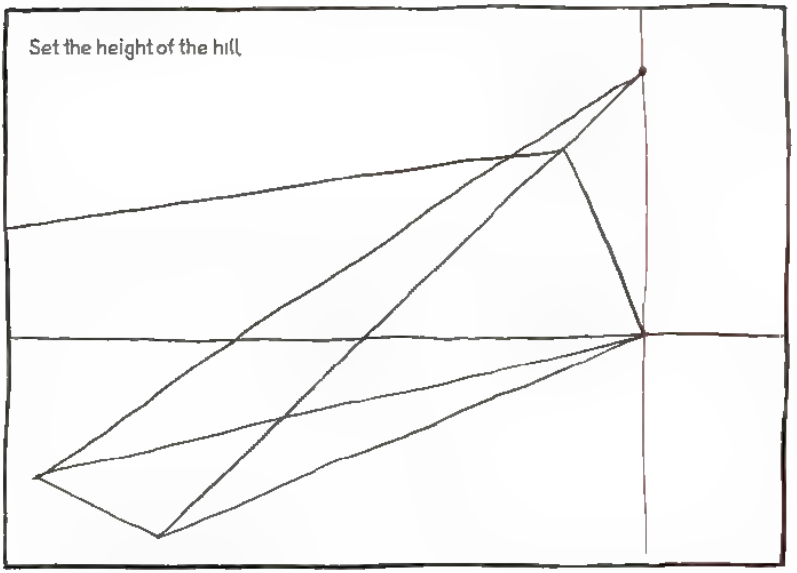
Drawing Stairs

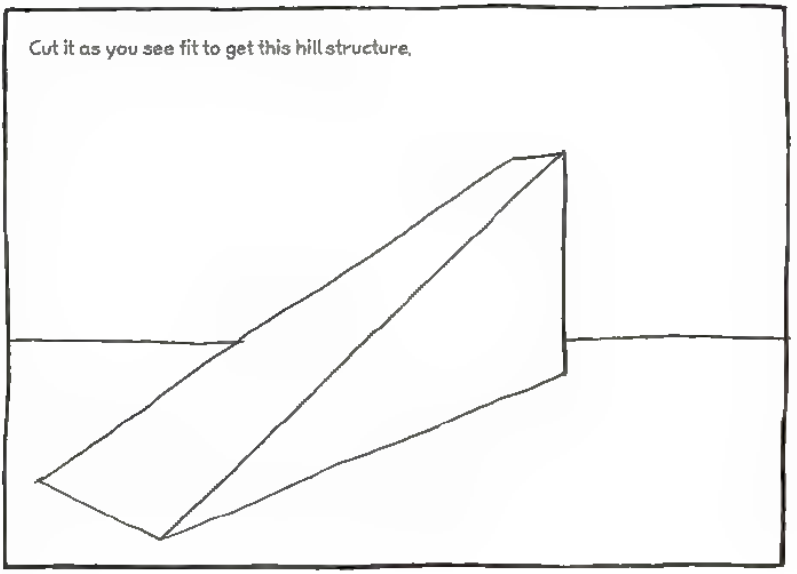
Draw a street from a 1-point perspective.
Then, draw a vertical line from the vanishing point in the direction that you plan to position the hill.



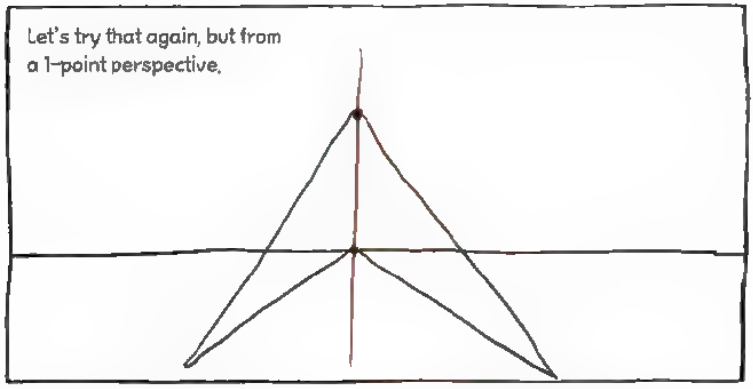
Pick a point on that vertical line and draw two lines as demonstrated.
That point is now the "secondary vanishing point, basically a vanishing point for the hill."



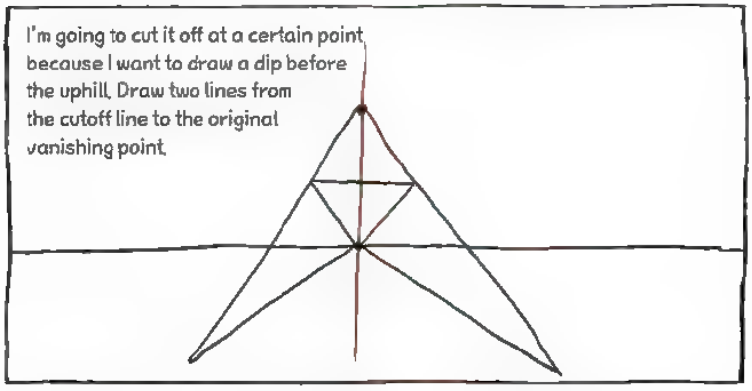

Set the height of the hill.


Cut it as you see fit to get this hill structure.

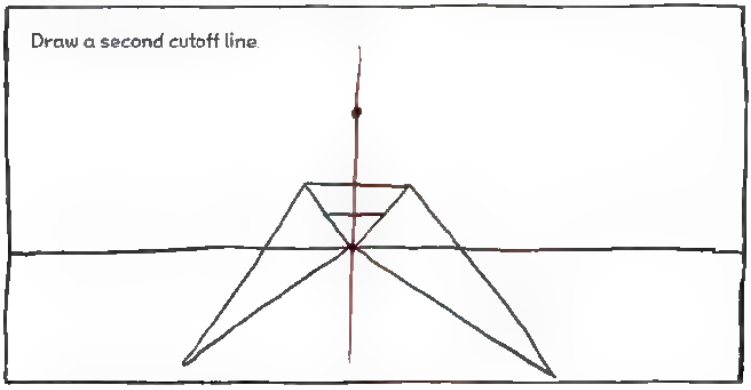
Let's try that again, but from a 1-point perspective.



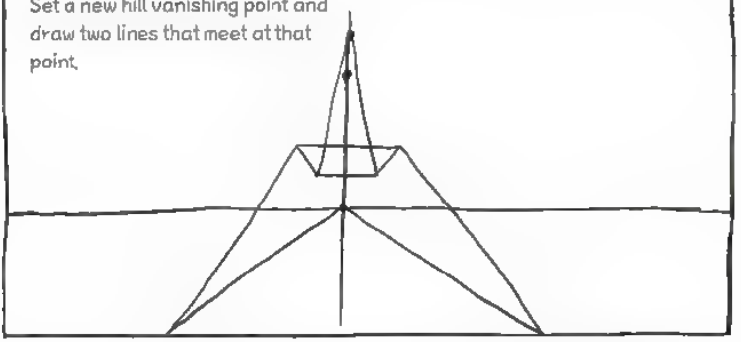
I'm going to cut it off at a certain point because I want to draw a dip before the uphill. Draw two lines from the cutoff line to the original vanishing point.



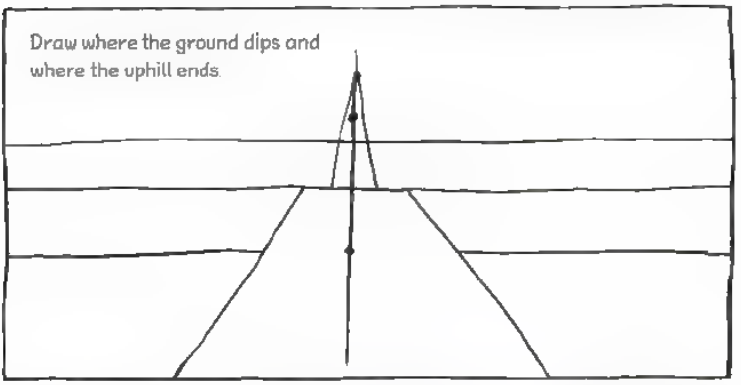
Draw a second cutoff line.



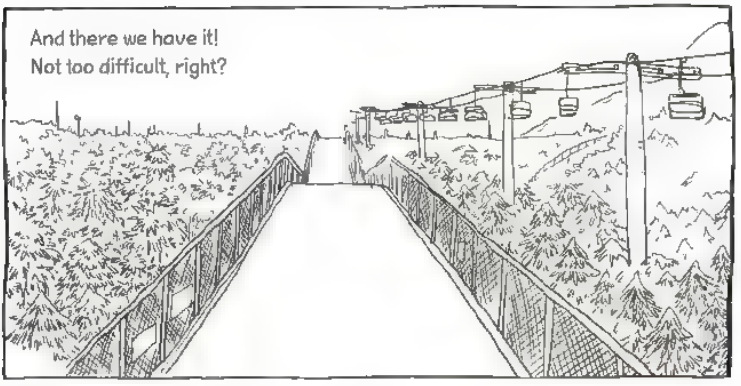
Set a new hill vanishing point and draw two lines that meet at that point.



Draw where the ground dips and where the uphill ends.

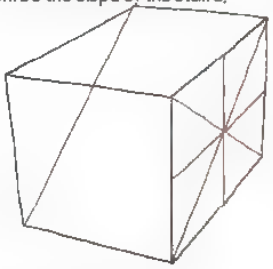


And there we have it!
Not too difficult, right?

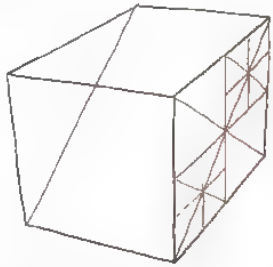


Drawing Stairs

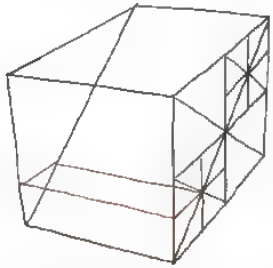
1) Find the center point on one side of a box. Also, draw a diagonal line that will be the slope of the stairs.



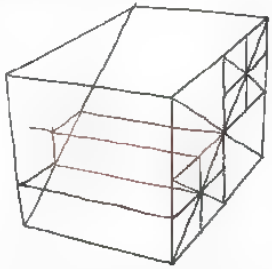
2) Divide the little rectangles one more time



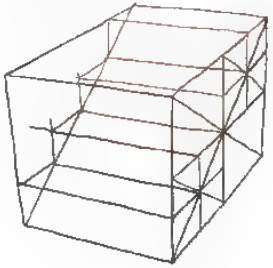
3) Draw one stair



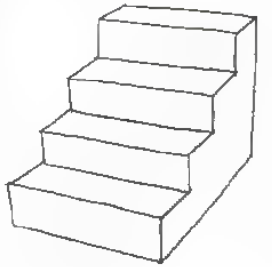
4) Follow the guide to draw another one.



5) Repeat.

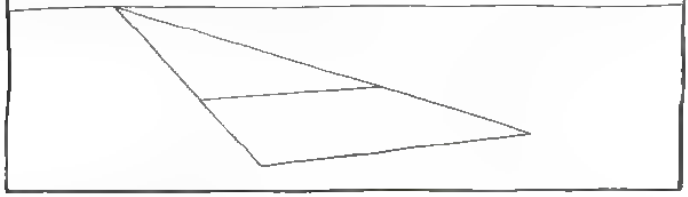


6) Easy-peasy!

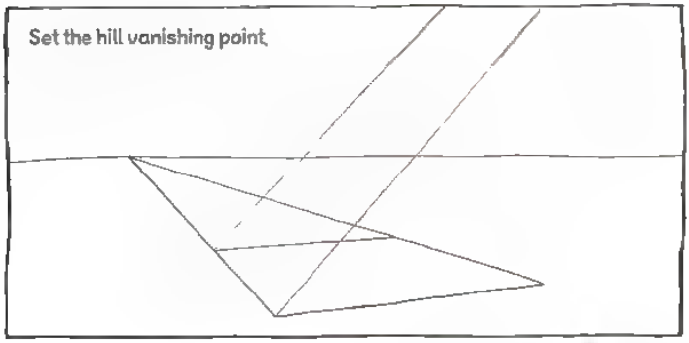


Drawing Stairs

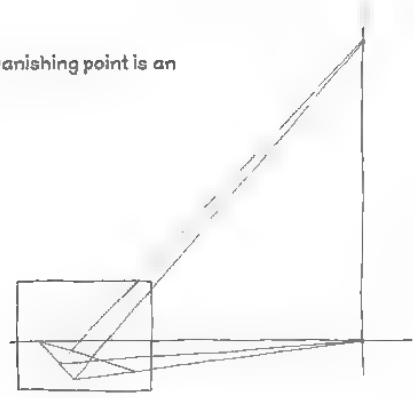
Let's try a different method this time.
Draw a rectangle from a 2-point perspective.



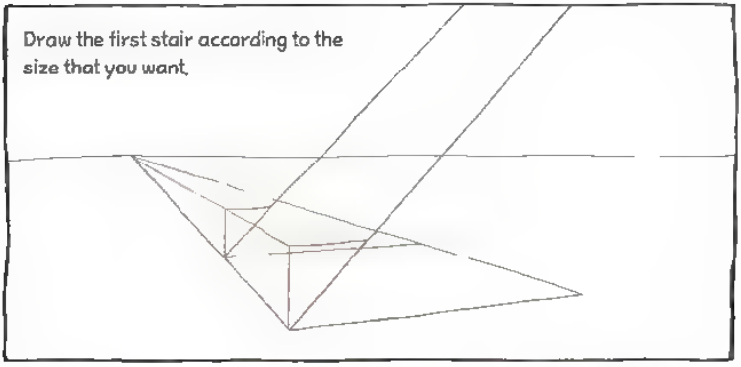
Set the hill vanishing point.



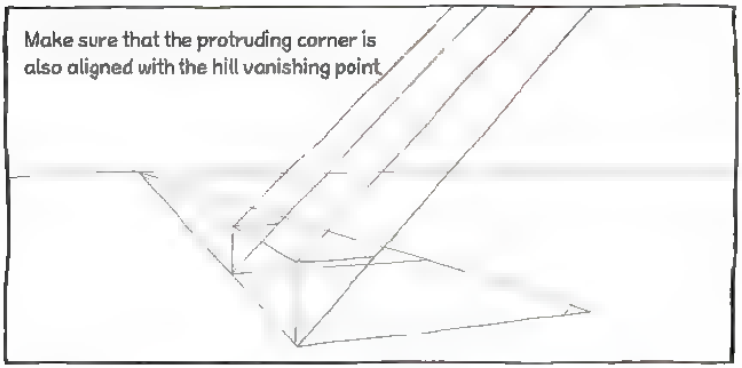
Setting a concrete vanishing point is an important step.



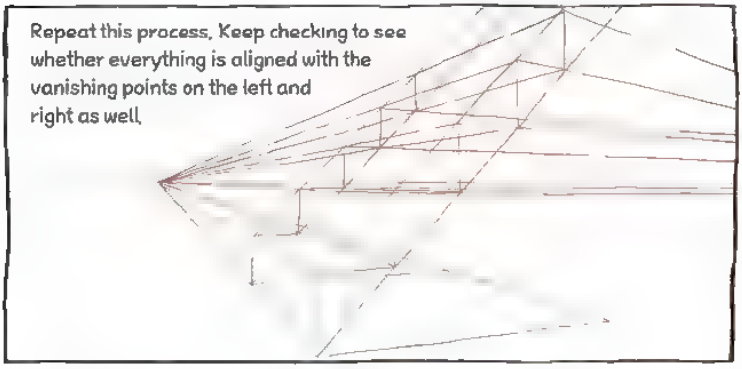
Draw the first stair according to the size that you want.



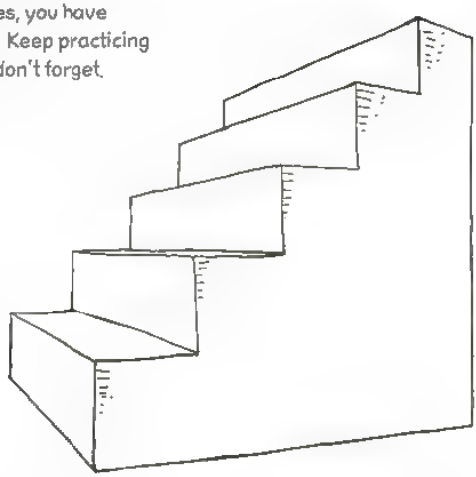
Make sure that the protruding corner is also aligned with the hill vanishing point.



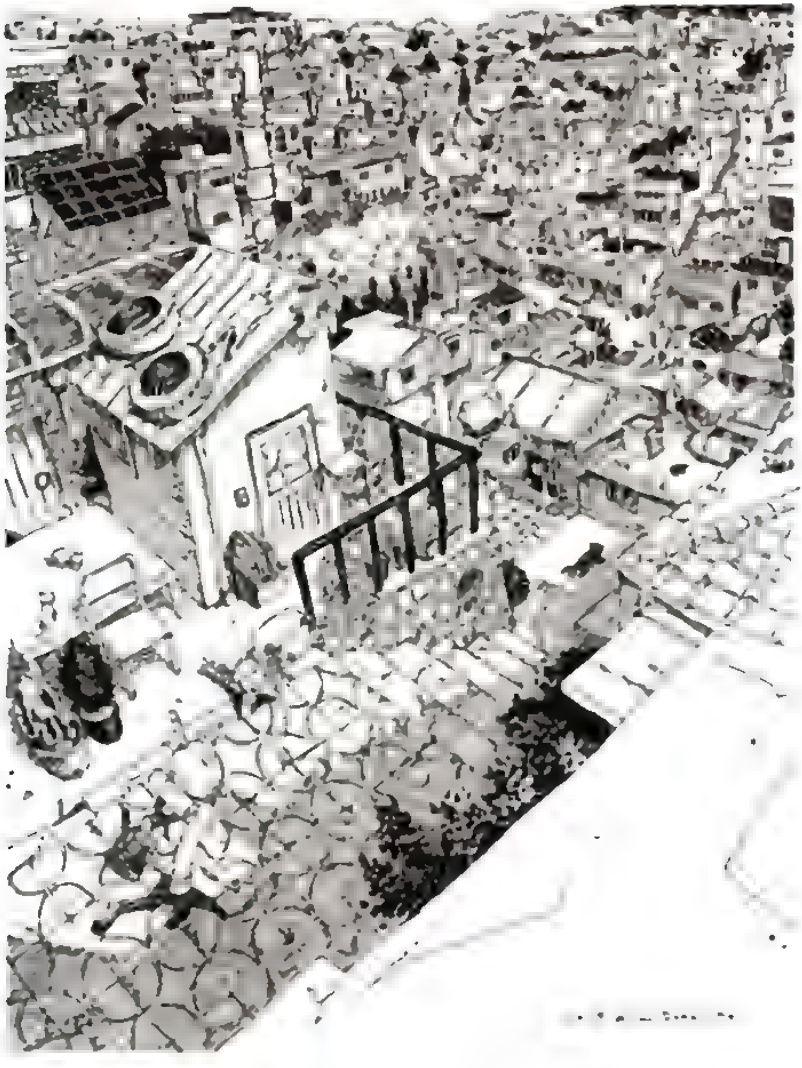
Repeat this process. Keep checking to see whether everything is aligned with the vanishing points on the left and right as well.



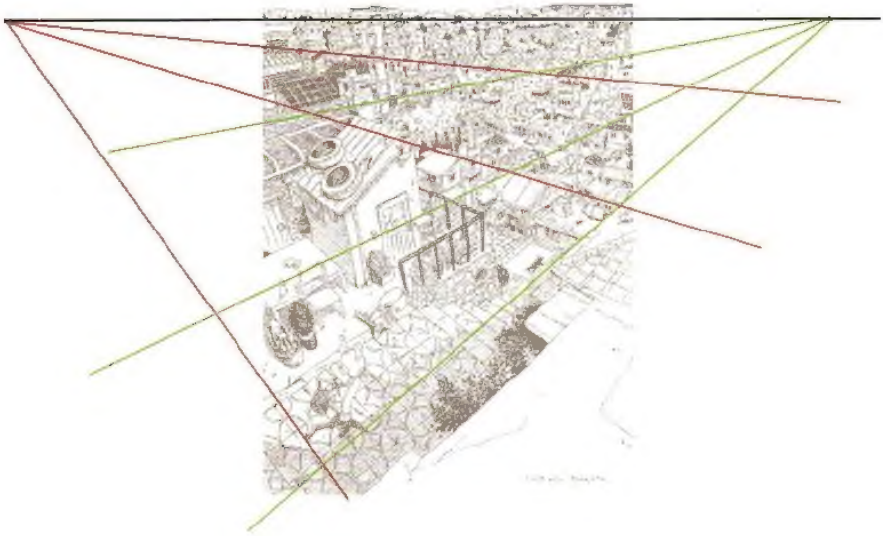
Ta-da! Once you erase the guidelines, you have these stairs. Keep practicing so that you don't forget.



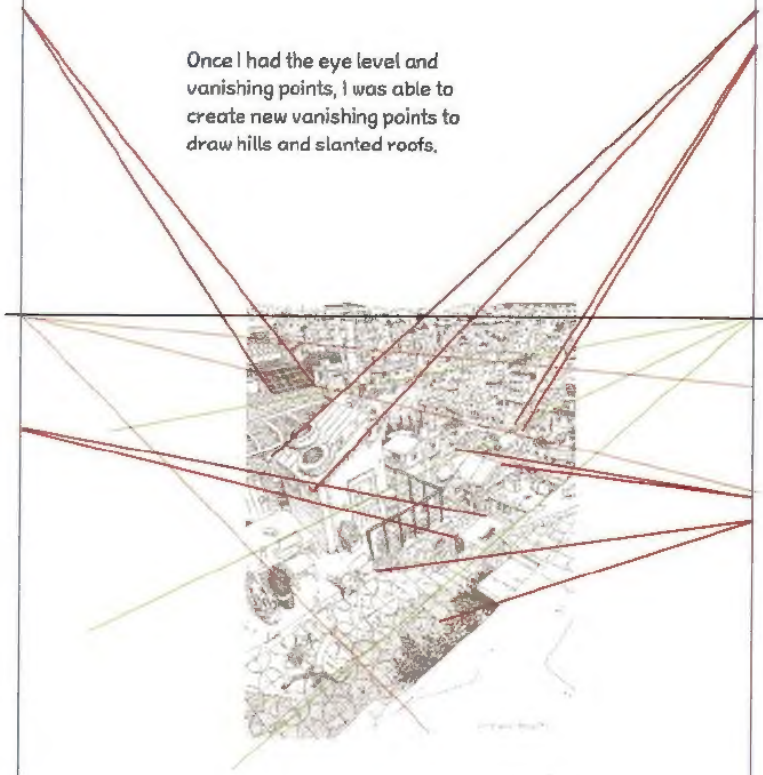
Here is an illustration using the techniques that I just taught you. I encourage you to keep working on finding the eye level vanishing points and hill vanishing points.



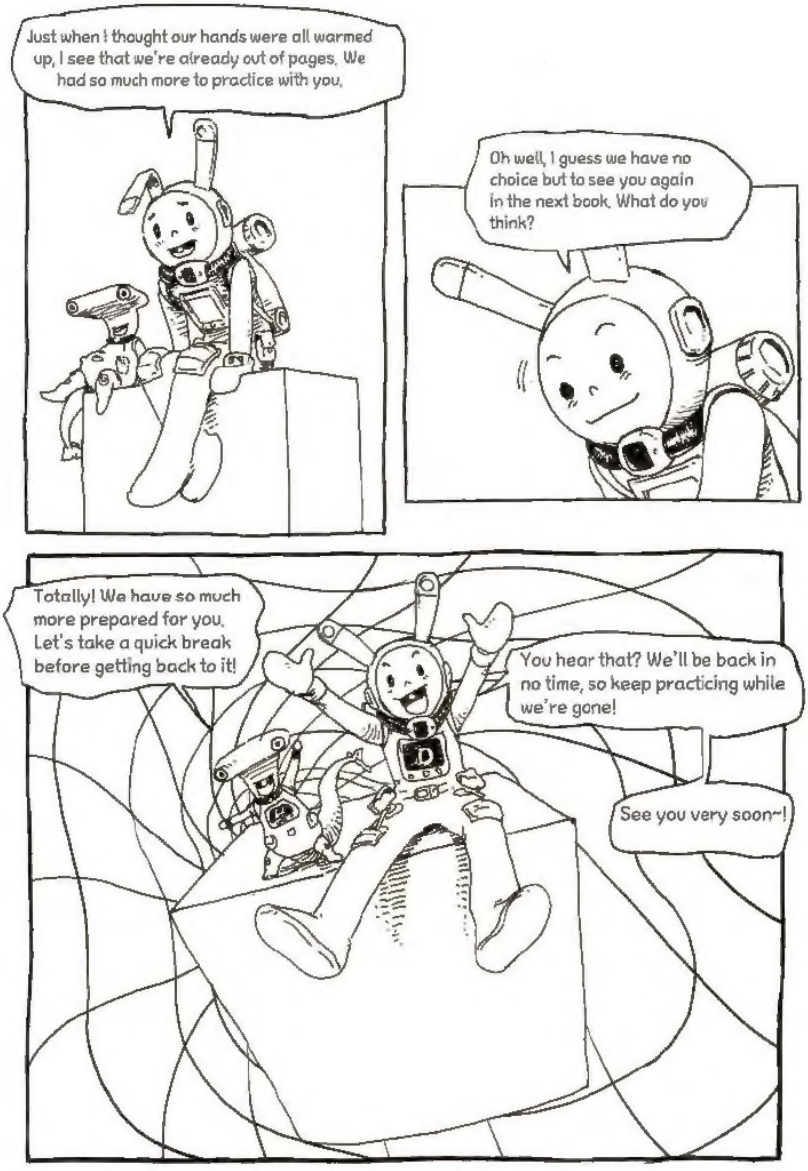
Find the eye level and the left and right vanishing points.



Once I had the eye level and vanishing points, I was able to create new vanishing points to draw hills and slanted roofs.



You can see that all these rules apply to this drawing, even if it might not look like it. Isn't that interesting?


Just when I thought our hands were all warmed up, I see that we're already out of pages. We had so much more to practice with you.
Oh well, I guess we have no choice but to see you again in the next book. What do you think?
Totally! We have so much more prepared for you. Let's take a quick break before getting back to it!
You hear that? We'll be back in no time, so keep practicing while we're gone!
See you very soon~!

EPILOGUE

Honestly, I am worried about whether or not I explained everything well, whether I rambled too much and ended the book abruptly, and whether it'll be okay for the book to be published as it is. But I have no regrets. I'm going to be satisfied for now and see how it goes. Naturally, I'll come to see the parts that are rough around the edges, but I will move forth to the next stage after careful reflection and thought. Let me wrap up by talking about something more constructive than just my thoughts about this book. Not too long ago, I got to see my teacher Kim Jung Gi, the "god of drawing," teach at his studio. Since he usually teaches through his drawings more than his words, I was wondering what he would draw. But I heard him talk more about himself than I expected. Many people say that he is this "genius" or a "god," but he emphasized that although he did have the raw talent to begin with, he also drew A LOT. He said that when he had a field of interest, he would draw things over and over and over again until he completely understood the structure. And if he found a new field of interest, he would also make use of his previous knowledge to aid his learning process. He said that it was this constant training process that has allowed him to be where he is now.

He also said that he has seen many talented people, but that talent can only carry someone so far. Once you're out of school, it's all about hard work. None of this was news to me, but I think there's a reason why all the stories told by the top people in any field convey a similar message. I was greatly inspired by what he said and, in a way, felt comforted and affirmed in the path that I've chosen for myself. It also gave me a sense of clarity regarding my next steps. They say "where there's a will, there's a way," and that whoever has a dream should seek ways to make it come true rather than make excuses. Of course, it's not just about trying. You have to do well. But if I constantly immerse myself in my field of interest and study and work hard, I believe that I will find my own story and then, only then, will I be able to find the joy in life.

Soldier on, everybody!
I wish you all the happiness in the world!